

Journal of

Family and Society Research

Volume 1(1), June 2022

ISSN 2955 – 1676 (Print) ISSN 2955 – 1668 (Online)

Published by the
Association for Family and Society Scientists
www.afass.org.ng

Printed by
Great AP Express Publishers Ltd
Oyibo Lodge, Olivet Area, Amogbo Nsukka
0811 698 1800; 08080655723
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Journal of Family and Society Research is aimed at publishing articles with quality contents and clear methodological procedures. Every article published here undergoes series of review from our able editorial team who have proven record of academic achievements in their various disciplines.

This first publication is the beginning of many more volumes to come. The further we go, the better we become. Feel free to always attend our annual international conferences and workshops as they promise to be very interactive and mind whetting.

Thank you once again for being part of the good thing the Good Lord is doing through us and for us.

Best wishes.

Professor Philip Mefoh

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Repositioning the Family for Economic Survival in a Challenging Society: Research Imperatives

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Abstract

This paper reviewed the concept of family; changes in the family as well as the role of research in assisting families cope with economic changes. Family is a source of emotional and psychological strength for its members. It meets the economic requirements of its members' families by acting as a production and consumption unit. Over the years a lot of changes have taken place in the family. Urbanization, mobility of population, education, new sexual morality, new direction of recreation are some of the factors. Research can help the family to survive economic challenges. The following are ways research can contribute to economic development of the society which includes the family. Research result can help in cutting cost of production, make large contribution to the economic growth and overall national welfare. This will benefit the family because the family is the basic unit of society. The growth of the foremost countries of the world is as a result of research. Maintaining financial stability is a means of being able to meet monthly expense and still have a little savings. To maintain sound financial stability one must have savings hence having a set amount automatically saved each month. Families should cut out or reduce expenses, invest in their future and never do impulse buying. Conclusively, families are no longer what they used to be. Poverty, scarcity and all forms of economic hardship threaten the existence of the family. Research has to be carried out to identify how families can cope even in the very harsh economic times.

Keywords: Family, Role, Research, Economic Development, Survival Strategies

Introduction

The Family is an institution for carrying out essential production, consumption, reproduction and accumulation functions that are associated with social and economic impairment of individuals and societies. The Family has been defined in various ways by different authors. According to Mondal (2020) is an intimate group made up of people related to one another by bonds of blood, sexual mating or legal ties. It can be described as the smallest and most basic social unit which is also the

most important group in any society. The family can also be seen as a social group made up of a father, mother and children. It is the most immediate group a child is exposed to and has tremendous influence in the life of a person from birth until death. It plays a great role in the life of every individual as it cares and empowers. The family is responsible for all round survival of an individual in every situation.

Meaning of family

The family has been defined by different authors Bierstedt (2002) stated that family is a more or less a durable association of husband and wife, with or without child or of a man or woman alone with children. Family is the biological social unit composed of husbands, wife and children. Family is a group of persons united by ties of marriage, blood or adoption constituting a single household interacting and inter-communicating with each other in their respective social roles of husband and wife, father and mother, son and daughter brother and sister, creating common culture (Eliot and Meoull 2002). The family has the following characteristics

- It is universal
- Family is based on marriage which result in a mating relationship between two adults of opposite sex
- Provides an individual with a name thereby acting as a source of nomenclature
- Helps in tracing ancestry
- Is the most important group in any individual's life
- It is the basic group in the socialization process
- It is the most important group in society and it is the nucleus of all institutions, organisations and groups
- Family is based on emotions and sentiments, it provides basis of family ties
- Family is made up of different economic and social roles

Traditional role of the family

Traditionally the family has the following roles:

1. Through the family, procreation takes place. Sexual relations are sanctioned outside marriage
2. The process of reproduction is only institutionalized, regulated and controlled in a family
3. Family helps in propagation of the human species and perpetuation of the human race
4. Provides individual with identity and name from one generation to another
5. Family is a source of strength, emotional and psychological for its members. Every member depends on the family
6. Family fulfills the economic needs of its members families are the production and consumption units. They produce what they need
7. Family is traditionally responsible for the education of the children

Changes that have taken place in families and reasons for the change

Over the years a lot of changes have taken place in the family. Dominant family dynamics are changing. These changes include the following

1. Decline in the average family size: All over the world fertility rate is going down. As a result the average household in the 2000s saw a declining trend in the number of children born to families. Average size is now 2-5 in 2018 (White 2019).
2. Single family homes are on a rise. The average single – family home size was approximately 1590 square feet but this has changed to 1000 feet
3. More mothers are entering the workforce. Earlier mothers were confined to staying at home to look after their kids but many women are now having access to education and entering the workforce. According

to US Department of labor, more than 50% of mothers have joined the workforce representing 47% of working women (Whete 2019).

4. Single Parent Home: Single parent homes are on the increase with an increasing divorce rate instability of marriages and personal choices of lifestyle has led to this phenomenon.
5. Adolescent motherhood: This is of a special concern as they tend to have low educational attainment, when married they suffer high rates of mutual stress and their employment tends to be restricted to marginal economic sectors. The children of these adolescent mothers are likely to live in poverty.
6. Increasing families from non-mainstream cultures internal and international migration is fast becoming a norm. Many families within Nigeria are suffering from internal migration caused by instability occasioned by sacking of people from their homes by bandits forcing people to live in internally Displaced Camps (IDP). This has brought about changes on lifestyle poverty and lack of resources.

Factors that Brought Changes in the Family

Whenever any change takes place it leaves an impact on other aspects society as well. All these become reasons for bringing about change in the family also. These reasons can be social, political, philosophical and economic (Appllebury, 2022) social reasons. These include, urbanization, mobility of population, education, new sexual morality, new direction of recreation.

Political reason: These include change in authority and women's right.

Philosophical: In the olden times, marriages in the society were thought to be fixed in heaven Marriages was thought to be a religious binding, releasing the partners from bondage only after death. This is not the attitude today where marriage is considered as a contract that may be broken. In older times, individuals had very close ties with blood relations. This kinship and attachments of oneness is becoming rare.

Economic Reasons: Industrialization, material standard of living and economic independence of women have brought about changes. Other forms of economic challenges include high rate of unemployment and under employment. Increasing inequality with many not being included in the growth process. High rate of poverty and low growth, volatile growth rate depending on only one source of national income for example oil in Nigeria. Scarcity even in the presence of unlimited wants. Inconsistent redistribution of income and how to deal with external costs occasioned by debt servicing (Pettinger 2020).

Apart from these economic challenges already mentioned there are for basic economic problems facing the family arising from scarcity of resources. These are:

- What to produce
- How to produce
- For whom to produce
- What provision if any are to be made for (Pettinger 2020) this involves families deciding of production based on availability of different factors of production and their prices, distribution of goods and services and sustainability of resources

The role of Research in the Economic life of the Family

Having analyzed the problems faced by families especially economic challenges in this segment of our discussion lets us see how research can help the family to survive these economic challenges.

Many authors including Ewell (2010) have suggested the following as ways research can contribute to economic development of the society which includes the family. Research produces new products. New products are usually as a result of research. Research results from R & D designs or even any form of research design bring out new product which can help the family to grow. Research also creates new jobs and new industries for example research results in R & D if followed, lends itself to new development jobs and new industries which provide employment for family members.

Research result can help in cutting cost of production. For example in the production of cotton fabric, the hand 100m, paver or automatic 100ms are available, however research will reveal which one will require more labour, more time and resources.

Research can make large contribution to the economic growth and overall national welfare. This will benefit the family because the family is the basic unit of society. It is no gainsaying that research can spearhead national growth. The growth of the foremost countries of the world is as a result of research. Research can lead to the formation of family policies (UN 1997). Such family policies can lead to the following:

- Poverty eradication
- Increase in child care

- Increase in health status
- Better educational standards
- Counselling services available to the family which can help in conflict resolution among couples, avoiding breakdown of marriages, solving property and housing problems, stress management, domestic and family violence, youth intervention programs and children at risk for example IDP Problem.

Research can be of help in helping fathers in child rearing. Seminars and workshops can be organized where research result are disseminated for fathers. This will help them acquire parenting skills, thereby promoting gender equality. If the Nigerian male dominated house of senate and house of representative members have been availed with research results on the family I don't think they will reject the gender based bills that they have rejected.

Approaches to Economic Survival by Families/Coping Strategies for Repositioning Families

In the face of all the challenges facing families the following are suggested approaches to survival of families.

- a. **Job loss** which is one of the economic challenges families, individuals should take up lower-pay jobs to reduce short term pressure in meeting basic needs and obligations while looking for high-paying jobs (Ologbon-Ori, 2016).

He also suggests that individuals should register with professional job-finder organizations for effective job search family members can consider career change or acquiring new sellable skills.

- Relocation can also be done in order to position oneself competitively
- Borrowing from friends and families can also be a source of cushioning job loss

b. **Family relationship** friction which is prevalent in this period of economic hardship can be taken care of. Families should synchronize bonds and work together, plan together and execute together. Families can plan to have a meal together at a decent and low profited restaurant. They can cancel holidays abroad and sell some of their properties that they “tucked” away.

c. **Loss of opportunities**

Family should key into advantages provided by government or organizations e.g the legendary SURE-P programme .

Families should research and find out investors and partners they could key into:

Financing Education

- Families should switch their children to cheaper good quality schools with good standards. Children could be sent to good public universities. Children especially the undergraduates can combine work with schooling for self financing.
- Be part of family businesses
- Children could be made to be part of family business where they can replace some of the employees working for the families in order to save resources.

Acquisition of Skill

Families should encourage family members to acquire vocational skills

other than what they studied in school. These skills they can fall back on in these trying times of need. During holidays children can learn skills e.g computer skills, catering skills among others.

Entrepreneurship

Families should go entrepreneurial, they should establish small scale businesses. Like computer businesses, agricultural business like fish ponds, poultry, horticulture. In order to succeed in these businesses family members must acquire entrepreneurial skill. They must do SWOT analysis of the environment they live in. They should start small and gradually nurture the business. They must acquire competencies in Managerial skills, accounting and financial skills, marketing and sales skills and other general business skills like basic steps in starting a business.

Sound Finance Management

Families should make sure they are debt free thus maintaining financial stability financial stability is a means of being able to meet monthly expense and still have a little savings. It involves proper planning and living within their means. To maintain sound financial stability one must

- Have savings hence having a set amount automatically saved each month
- Never do impulse buying, plan for what to buy, budget for what to buy
- Be wise and manage your impulse saving
- Evaluate your expenses and live frugally
- Track your expenses. Families should cut out or reduce expenses

- Decide if each expense is really necessary
- Invest in their future. Start planning for retirement when the strength is still there
- Keep your family secure, save for emergency and not be dependent on anybody
- Use the envelope system for savings
- Pay bills promptly and do not allow them to accumulate
- Grow your net worth, look for new ways to make money using what you have
- Seek for alternative jobs
- Do not fall victim to many related stress and worry
- Be organized and focused
- Consider priorities: families should prioritize their needs. They should come to terms with the realities of the economic times.

Conclusion

In this hard economic times, families must adopt coping strategies listed in order to survive. Family and family values have changed. Families are no longer what they used to be. There has been changes in life style, incidence of divorce, separation cohabitation, formal marriages of same sex partners, voluntary childlessness, one parent household among others have been on the increase. Poverty, scarcity and all forms of economic hardship threaten the existence of the family. To avoid the extinction of this basic institution called the family researches have to be carried out to identify how families can cope even in the very harsh economic times.

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Repositioning the Family for Economic and Social Survival in our Changing Society: Research Imperatives

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Abstract

This paper discusses the concept of repositioning the family, the roles of family members and the various societal changes that are currently affecting the Nigerian family. To reposition, connotes rearrangement, the need to find new more workable approaches, to adjust, or place in another position. To reposition something becomes necessary only when the existing situation or circumstance no longer produces expected result or goal. The family is a sociological/socio-cultural creation that represents the smallest unit of the society often made up of father, mother and children. In most patrimonial societies, the father initiates the marital union between himself and the wife. He bears the cost and beholds the wife as a source of joy and pride. The mother assists the father in these duties but is also focused on care and nurture of the home. The family as a microcosm of the society is faced with many challenges. They include economic and social upheavals epitomised by increased rates of crime. Others include increase in poverty and unemployment rates, galloping inflation, low life expectancy, increase in mental and behavioural problems. A changing society might be associated with social and economic crises such as inflation, unemployment, and increase in crime and drug abuse rates. Many of the current generation of young Nigerians do not want to be patient with life. They are in a hurry, looking for shorter often unlawful corners to command wealth and influence. This is the crux of the challenges of our society that threaten economic and social survival. Therefore, there is a clarion call for empirically tested solutions as the way forward.

Keywords: Family, Economic Survival, Challenges, Contemporary Nigeria, Youths

Introduction

The word, reposition, connotes rearrangement, the need to re-strategise, to find new more workable approaches, to adjust, or place in another position. To reposition something becomes necessary only when the existing situation or circumstance no longer produces expected result or goal. In the context of the title of this lecture, to reposition the family---, implies that the family is not achieving its goals

currently and therefore the need for a change.

One can also ask: what is it that is not working in the current family situation or structure in our clime that requires changing for effective economic and social survival? Is it in the roles of the individual components of father, mother or children? Is there the possibility that loyal and full performance of duties is unsatisfactory or lacking in or among the parties?

Could it be in the communication among these components, their approach to issues or is there apparent misplacement of priorities in the leadership of the family? Are the parents especially the mother available at the right time? Is the protection of family values still a top priority among fathers, mothers and children or obsession for material and power accumulation and struggle?

To address this topic, we need to provide some responses around the above questions. More specifically, what needs to change and how, in order to guarantee or ensure economic and social survival in a dynamic society?

The Concept of the family

The family as we understand is a sociological/socio-cultural creation that represents the smallest unit of the society often made up of father, mother and children. Though there may be other individuals, friends or persons consanguineously related or not that live in a family, they are not strictly considered the members of the family unit. In the discussions that follow, we shall maintain this definition of the family.

Characteristically, the family is the mantle of socialisation. Another agent of socialisation is the school. However, we shall focus our discussion only on the family due to its uppermost and domineering influence on the development of the child. The family is usually housed in a home where basic needs of life are met. In other words, every ideal family has a physical geographical root/location that is identifiable while the members may spread into far and near distances yet organically connected in their pursuit of

development, emotional and social support, love, gregariousness, interdependence, mutual welfare, common identity and perpetuity. Family creates strong bonding among its members in such a way that each literally represents a part of a body that functions in a systematic and ecological pattern in tandem with other parts in a way that any challenge in one component is felt by all other parts. Family acts as a point of succour, recuperation and regeneration. In many African societies, individual family members have specialised roles.

The Father

The father is the head of the family that ensures availability of food, shelter, security and a symbol of confidence and authority. In most patrimonial societies, the father initiates the marital union between himself and the wife, bears the cost and beholds the wife as a source of joy and pride. The mother assists the father in these duties but is also focused on care and nurture of the home in addition to child-bearing and nurturing responsibilities. Let us look at the mother or generally the woman, what or who is she?

The Mother

A woman can be described as an adult female human being. She may be in marriage in such a case she bears the name wife and has a male counterpart described as her husband. A woman may also have children in which situation she is called a mother.

Biologically, she has a different constitution from the male counterpart. She is endowed with capacity to become pregnant and lactate as many female mammals. The human female is also

said to have XX chromosomes while the masculine has X and Y chromosomes. These basic disparities have massive effects in determining crucial differences between male and female human beings such as in hormone production and use, sexual characteristics, development and use, cardiac activities including blood pressure and pulse rate, muscle strength and volume and fat tissues, immune response as well as in longevity. Generally, women outlive men. One reason for this is the fact that men have more cardio vascular morbidity and mortality than females (Ginter and Simko, 2013). This has been explained from the different nature of hormones in men and women for instance women are believed to have more immunity than male and that estrogen, a female sex hormone, tends to protect against cardiovascular diseases due to its regulatory effects on circulation of harmful cholesterol among other factors.

Beyond other differences between the man and woman, hormonal discrepancies have marked morphological impact on the human female such as development of breast, periodic menstrual flow and menopause all of these have marked effects on her behaviour and health. In addition, there appears to be some structural brain differences between men and women. Generally, men have more brain mass, about 11% higher than women (Xin, J. Zhang, Y. Tang, Y. and Yang Y. 2019). Incidentally, the smaller size of the female brain has the advantage of higher ratio of gray matter to white matter. It also portends higher rate of communication or connection between and within brain hemispheres.

Other structural differences in the areas that regulate emotions and other primitive functions may in part account for the cognitive, perceptual, problem solving pattern and other differences that exist between men and women. They may possibly contribute to the special nature of the woman.

The traditional Igbo proverb captures the duties of the woman/mother thus *Nwanyi bu ulo* (the woman is/makes the home). Due to her special nature and connection with children (capacity to conceive, breastfeed and influence etc), she has competence to provide most significant and fundamental positive or also negative control upon the child.

The mother is the first agent of socialisation through her ability to attend to the needs of the child from infancy. Indeed due to the strong bonding that results, her roles form the index impression upon the child whose brain is like a tabular rasa or photographic plate on which first exposure dominates all subsequent ones. In fact, a mother's control of the child cannot be fully estimated and this gives her the strongest reference upon which other impressions register. This naturally determining relationship makes the woman *primus inter pares* in determining the behaviour of the child. Therefore, if the child must be prepared for successful roles in life, the mother must lead, then the father, siblings and the larger society. In addition to the foregoing almost the entire human history described the woman as an exceptionally intuitive human being. Intuition sometimes called the sixth sense could be described as the ability to correctly sense and be directed upon present and future events with the aim

of guiding the individual away from danger in its largest connotations. Intuitive guidance may and in fact often fails intellectual calculation tests but, i.e. does not make much meaning at the surface but comes out to be true as events unfold. For instance according to a history, Julius Caesar, one of the strongest men in times past was stabbed by sixty conspirators including his close trusted friend, Marcus Junius Brutus. Indeed, it was the latter's stab that got to Caesar's heart which filled the latter with gross disgust that eventually killed Caesar, thus his lamentation, ..."even you Brutus". What is more instructive here is that on the eve of that fateful day of 15th March, 44 BC as reported, Caesar's wife warned him times without number to stay back home that he was to be in great danger but the fearless Caesar would not listen to the wife. The rest is now history.

In the Bible, according to the Gospel of Mathew, Pontus Pilate was seriously warned by his wife not to have anything to do with Jesus not to talk of condemning Him but Pilate would not listen. Many more examples of the intuitive nature of women abound.

Now how can we support the women and leverage on this special ability to improve the lots of our children, the youth and the larger society? One way I think is to appreciate the women folk and listen to their true counsel especially in matters that are not clear to us men. Husbands are quite critical in this direction to encourage the women to be at their best in their duty positions. Imperceptibly but steadily, we shall then make huge progress.

The Child

As a key member of the family, the child provides the parents with company and assists in family chores. He/she offers loyalty, joy and stimulation to the parents and larger society in addition to giving the parents hope for the continuity of the lineage. The child is also seen as the family investment for the future. He/she is expected to become the breadwinner when the parents have become retired and old. In this connection, the child is the hope of the parents for the future especially when the latter have become incapacitated by old age, disease or infirmity.

The Family in Contemporary Nigeria

The situation of the family in present day Nigeria can be summarised by the remark of the great Poet and Playwright Chinua Achebe in his book, *Things fall Apart*. Indeed, the Nigerian society is a highly dislocated and traumatised community. Things have fallen apart and the centre can no longer hold. In Nigeria since the recent past, no one can really guarantee tomorrow and an average citizen especially young people want to desert the country. The word desert absolutely captures the real context. The family as a microcosm of the society is faced with many challenges. They include economic and social upheavals epitomised by increased rates of crime, drug abuse, impunity especially by the political class, murder and ritual killings as well as spousal brutality and dastardly acts occasioned by unknown gunmen, herders-farmers clashes, Bokoharam insurgency, police and other security agencies brutality, extortion and

corruption. Others include increase in poverty and unemployment rates, galloping inflation, low life expectancy, increase in mental and behavioural problems as well as physical health challenges among others.

According to available data (NBS, 2021), 40 % or 80 million Nigerians live in poverty and it is feared that the figure may increase (World Bank Report, 2022). Data from National Bureau of Statistics (2022) showed unemployment rate at 33.3% and underemployment prevalence at 22.8%. Youth unemployment and underemployment rates stand at 42.5% and 21.0% respectively. These high negative economic indicators translate to worsening economic outlook with associated high level of crime and drug abuse especially among the youth population which compound family and social situations. An idle mind, they say, is the devil's workshop. When young people cannot find useful jobs to engage in, their energy is then spent in other non-socially acceptable ways.

Evidence (UNODC, 2018) from first comprehensive national household drug use survey in Nigeria showed the country has a drug use prevalence rate of 14.4% or that 14.3 million Nigerians aged 15 to 64 used drugs in the year of study, with male-female ratio of 3 is to 1 respectively. This epidemiological rate is considered high in Comparison with the 2016 annual global drug use rate of 5.6%.

What is more worrisome is that while participants aged 24 and below had the lowest rates of use in the previous year, drug use was most common among the age group of 25 to 39 years (UNODC, 2018) within the same period thus a great challenge to the country's active

and productive workforce. Drug use is associated with decline in productivity, absenteeism and poor judgement.

In the preface to the Executive Summary of the 2021 World Drug Report, The Executive Director of UNODC has this to say.

Drug use killed almost half a million people in 2019, while drug use disorders resulted in 18 million years of healthy life lost, mostly due to opioids. Serious and often lethal illnesses are more common among drug users, particularly those who inject drugs, many of whom are living with HIV and Hepatitis C.

Source: Ghada Waly, Executive Director United Nations Office on Drugs and Crime. World Drug Report 2021 (United Nations publication, Sales No. E.21.XI.8)

Given that drugs negatively impact human physiology especially the Central Nervous System, users are more likely to be sickly and may take longer time to recover, are prone to addiction/dependence, are likely to experience disturbance in perception especially during the active phase of the drugs resulting in poor judgement, poor response and negative consequences for the individual (s).

Economic Survival

Economic survival in our context relates to the capacity to respond successfully to the competing forces of production in attending to the basic needs of life. This implies a situation that individuals creatively adjust to economic challenges by applying adaptive skills to cope with resource insufficiency to preserve self, given that survival in naturally non-negotiable. In a changing society as ours, economic endurance is challenging. A changing society is one in which things remain fluid such that

long term planning, budget forecast and other futuristic activities upon which present decisions are taken become difficult or impossible to execute due to instability. It is one in which economic and social indices cannot be predictable, especially in medium and long term bases. Due to its volatile nature, a changing society might be associated with social and economic crises such as inflation, unemployment, and increase in crime and drug abuse rates among others. At the moment, The Nigerian State typifies a changing society.

Although it has been argued that change itself such as in taste, style, fashion, art and music, architecture, technology or trade is part of human society, such changes occur imperceptible over time in a way that people often flow with changes without sharp transitions. However, when changes become immediate, unexpected, significant and swift, demanding sudden adjustments, it could become a source of disturbance given that many human persons cannot easily respond with the prevalent degree of dynamism especially older persons. Such a situation often results in high mental and behavioural challenges.

To survive drastic changes requires development of resilience. Unfortunately, many of the current generation of young Nigerians do not want to be patient with life, a step in resilience cultivation. Rather, they are in a hurry, looking for shorter often unlawful corners to command wealth and influence. In this way, any and every means to wealth seem to be accepted to many especially young Nigerians. There is little or no reference to parents nor fear of loss of their love

since many of them may not have actually received real love and emotional care in their formative period. This in my view is the crux of the challenges of our society that threaten economic and social survival not only of the youth but all ages.

Where and how did it all start?

Psychologists believe that childhood is the most fundamental period of life and the critical moment to determine the course a person's behaviour will tread in adult life. Indeed, all other developments are unfolding of the prototype formed early in life and for Sigmund Freud, the first five to seven years. This early phase of life has undoubtedly the mother as the most critical factor of influence. Eric Erickson (1959, 1963) opined that childhood is the most critical period of life during which a child forms basic personality attributes such as trust, autonomy, initiative and industry. The formation of these core healthy personality attributes according to Erickson is a factor of how the needs of the developing child were attended to by the society epitomised by the mother. If the child perceives the mother's response as inadequate and unsatisfactory, the child develops negative personality traits of mistrust in place of trust, shame and doubt instead of autonomy, guilt instead of initiative and inferiority instead of industry. Many young people today probably developed these negative personality traits and have become terrors to the parents and the adult society, a huge indictment of the parents especially the mothers

Ladies and gentlemen, without further ado, you agree with me that the woman holds the key to a successful

family beginning with childhood which forms the foundation for adolescence, adulthood and old age. Ericson (1959, 1963) noted that successful resolution of primitive developmental crises positions the individual better to adjust to the challenges of later life.

In fact, childhood is the most important period in child formation and the woman is the most critical factor at that stage. One can safely say that the hope of a bright society depends on that duty-conscious-woman.

Furthermore, it is believed among the Igbo of Nigeria that the influence of the woman pervades everything from the child to the husband and unto the environment. Indeed, Igbos believe that the nature of the woman almost entirely determines the offspring thus the Igbo proverb *Aluhie nwanyi, amuhie nwa* (A wrong woman is married, a wrong child is born). Also *Akiiwe tosia, O la umurenne ya/ikwunne ya* (When coconut matures, it returns to the mother's home.) It is important to emphasize here that coconut at this juncture figuratively refers to the human being meaning when the child grows, he/she behaves more like the mother. Again, *Nne egbu n'ata agba, nwa ya na ele ya anya/ na-amuru*. (As the goat chews its cud, the child watches and learns). The woman is believed to have strength and resilience to overcome challenges much more than men.

Among the Igbo it is said that *A chuchie aja uzo, a choo nyanyi ka o nyu ya amari* (when a charm-like sacrifice is used to block the road, you look for a woman to urinate upon it and neutralise same. According to the tradition, it is only a woman's urine that has the capacity to neutralise charm. All the foregoing idioms of expression

demonstrate the long known influence of the woman, which appears to have been jettisoned by present generation, thus our present challenges.

Available Options

In order to survive the present economic and social problems in Nigeria, there is need for a major change of attitude towards the family. Much attention is needed to focus not only on the family but on the woman and the child as key actors of the society while all others will ultimately fall in. There is need for official recognition of child tendering as work by the government/state which needs to be compensated just as the administrator, a Gardner, a clerk or a doctor. This investment in the family will make mothers to devote sufficient attention, love and care to the offspring till the last is seven years at which time the woman may decide to choose another out-of-the-house job. The beauty of this investment lies in assisting the families bring up better human beings that will contribute more productively to the service of the state. In addition, crime rate among young people will significantly reduce in the long run thereby plummeting government spending on internal security. Also, with improved security, economic activities, foreign direct investment, job creation and enhancement of quality of life of Nigerians will ensure.

On the other hand, mothers with children less than seven years who necessarily choose to work outside their homes will not exceed more than four hours a day for a maximum of five days in a week but shall be paid full salary as their male counterparts. This is predicted on the assumption that child

care is service to the state and the society for which everyone needs to contribute. Government needs to ensure that the right legislation is made to compel organisations employ mothers whose children are within the stated age bracket. This is where affirmative action is needed for the good of our children and the future of Nigeria.

Indeed, if by law, the foregoing is implemented, Nigerian society will have well bred children that transform into good brothers or sisters, husbands or wives, and fathers or mothers. The offspring will be framed in love and attention to activate their humanness including resilience as the surest way to guarantee economic, social and mental health survival despite the changing nature of any society.

These calls for more longitudinal research to add to the growing evidence that children can best be raised in an atmosphere of parental love, presence, attention and timely response to their needs if the future is to be guaranteed.

The huge investment on security can be channelled to family protection with strong measureable positive outcomes. In fact less and less number of people will have something to do with law enforcement agencies. Unfortunately, what we find in our society today is both parents are out there chasing money and power and the child is left in the hand of a fellow ill bred child from another absentee parent or in the care of television or other electronic devices. The child grows to behave like the electronic device(s) that mentored him/her. No emotions, no humanity, no love and the society turn round to blame the child.

In a study on priority patterns of working mothers in Nigeria, Udeagha,

Uwaoma and Ezenwa (2011) found that 20% of career women would decide for career option if role conflict existed between family and work demands. If this study is repeated today, we may perhaps have over 50 % deciding for career positions. How then can our children learn virtues of life if not taught or modelled by parents especially the mother?

Lamentingly pitiable over a lost virtue mimics the contemporary situation of the family which I tried to capture figuratively thus:

The family, that oasis which nurtures, protects, guides and recuperates, the dome of succour to all ages of humankind has been polluted. The prime virtuous vanguard, the gatekeeper, the WOMAN, has been diverted in her goal to the effect that avarice, imitation and vanity alluringly lurked, disguise in seeming emancipation, modernity and equality. The Pearl has been violated. The original elements have dislocated from the nucleus and in reverse action now float loathsomely as potentially harmful free radicals.

This probably explains why we now have children who do not behave like human beings, callous, traumatised and pro drug abuse spree. Psychologists have provided numerous evidences that childhood is the most significant period of life to groom and decide almost exclusively on the personality of an individual. When therefore this responsibility is negated by parents especially the mother, the society pays dearly for it. Till date many people believe that there is no alternative to parental especially mother love, attention and care. That parents especially women who abandon their

children for other purposes pay very dearly for it later in life. It is believed that women who insist to nurture their children till at least five to seven years, who are present as and when needed before taking formal engagements stand an improved chance of having better behaved, more productive, happier and fulfilling children than their counterparts. Indeed, if our society will become better, if the family must survive economically and socially, there must be state and parental investment in filial love, timely presence to the child and personalised attention to the child. In all these, the women must again lead the way.

The Youth as a Symbol of Contemporary Cacophony in Nigeria

Let us pay particular attention to the average young Nigerian out there. The dressing suggests a somewhat disorganised individual. The hair is deliberately made very unkempt, bushy, rough, and ugly formed in the name of fashion. The trouser is torn or cut open at certain locations of the body and made loose to slack from the waist area exposing not-so-neat underwear as the person walks especially the male ones. The female prides herself for being "braless" to advertise her lustful morphologic attractiveness in some occasions appears completely without inner wears. All efforts point to pleasure seeking. The skirt is deliberately made very short, tight-fitting and exposing when seated or bent. She is happy to share her experience with her contemporaries how she drew men's sexual attention to herself. The physical movement is inclined towards either the front or sideways in the name of trend. While on

the road, the ear piece is fixed to the ear and he/she walks nearly though the centre of the road. The young youth cannot stay without the telephone even when eating. At night, the phone often drops off the hand when nature's call for rest becomes overwhelming.

What is more, the energy is spent on games, betting, drug use and sexual engagement. School work is seen as tiresome and any opportunity to cheat is welcome. Yet he/she likes to be successful, loves pleasure, know the prices of latest vehicles in town, the richest man on earth, the newest music in town and the worth of the various artists around the globe. Food is essentially fast unhealthy meals with lots of artificial seasonings in addition to soft and alcoholic drinks. Everything is on the move now and cannot wait for tomorrow. It is a neglected generation that ought to be pitied.

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Functional Properties of Full-Fat and Defatted African Elemi (*Canarium Schweinfurthii*) Flour

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Abstract

Flours derived from African elemi (*Canarium schweinfurthii*) fruit pulp could be another source of fruit flours. However, assessing the functional properties of these flours is a prerequisite for determining their potential use in the food industry. Thus, this study aimed to analyze the functional properties of the full fat and defatted flours of African elemi fruit. The fresh pulp of African elemi fruit (*Canarium schweinfurthii*) were processed into flour. The flours processed from the fruit were evaluated for their water absorption capacity, bulk density, emulsion capacity and least gelation concentration using standard methods. One-way analysis of variance (ANOVA) was performed on the data gathered using the Minitab 21 statistical software. Results showed that the defatted flour had significantly lower bulk density (0.34g/ml) than the full-fat flour ($p < 0.05$). Defatting, improved the water absorption capacity for the full-fat flour from 387.13% to 588.6%. Emulsion capacity (4.17%) and least gelation concentration (5.42%) of the full-fat flours also improved to (45.84%) upon defatting. The results obtained in this study indicate that the fruit flours (full fat and defatted) have potential applications in food formulations.

Keywords: *Canarium Schweinfurthii*, African Elemi, Full-Fat, Defatted Flours, Functional Properties.

Introduction

Achieving food security and a pollution-free environment has increased the attention fruits from tree crops receive (Ehiem et al., 2019). Though, quite a number of them are yet to be fully utilized. One of such tree crop is the African elemi fruit. The African elemi fruit (*Canarium schweinfurthii*) is a species of large tree native to tropical Africa. It is commonly found in the Eastern and Northern parts of Nigeria and is locally known as 'ugbe mgbá' in Igbo, 'atili' in Hausa, and 'Origbo' in Yoruba (Aniemeka & Ndubuisi, 2017).

The Eastern parts of Nigeria, mostly consume the fruit after it has been blanched in lukewarm water and eaten with salt sprinkled on it. Research studies show that the fruit pulp contains significant amounts of proteins, carbohydrate, and vitamins (Onimawo & Adukwu, 2003). The pulp of the fruit is also very rich in oil (Kiin-Kabari et al., 2020). Traditionally, whole seeds and pulp of African elemi and the resin of the tree have been used as medicinal remedies and wood fuel (Maduelosi & Angaye, 2015). Although, one major problem this rich fruit encounters is rapid spoilage. According to Ehiem et al (2019) about 40% of this

fruit is wasted annually due to hardening and rotting. The problem of post-harvest losses of certain fruits whose mesocarp contains a significant quantity of liquid that facilitates its deterioration may be alleviated if they are processed into flours. Processing these fruits into flours would provide a stable storage form and a more diversified use, limiting post-harvest loss that may have been occurring due to limited usage (Folorunso et al., 2019).

Processing the fruit into flour would also encourage its application in several food formulations. It is important to note that the utilization of any plant sources in new food product development or as a food supplement is based on the knowledge of their functional properties and nutrient composition (Omowaye-Taiwo, 2015). Awuchi et al (2019) described the functional properties of food as the essential physicochemical properties that reflect the complex interactions between the chemical composition of the food components with the nature of the environment and the conditions in which these are measured and associated. Therefore, understanding the functional properties of a food ingredient helps in the determination of its application during food preparations.

Previous studies of the African elemi fruit were on its proximate, mineral, and vitamin composition (Maduelosi & Angaye, 2015; Mathew et al., 2020; Nyam et al., 2014), assessment of the nutritional values of its oil (Ejike, 2021) and water absorption capacity of the fruits (Ehiem et al., 2019). These studies on African elemi (*Canarium schweinfurthii*) were limited to the full-fat pulp and its oil extraction.

There is limited scientific documentation on what happens to the by-product after it has been defatted. Therefore, the dearth of information on the functional properties of the full-fat and defatted flour of African elemi fruit prompted the need for this study. This study will also be adding to the existing body of knowledge on the functional properties of indigenous fruit flours. The study findings will be valuable to food industries, researchers, food chemists, flour industries, and nutritionists.

Objectives of this study

This study specifically aimed to;

1. Process full-fat and defatted flour from African elemi (*Canarium schweinfurthii*) fruit;
2. Analyze the functional properties (water absorption capacity, emulsion capacity and stability, least gelation concentration, and bulk density) of the flours processed.

Materials and method

Study design: This study adopted an experimental research design for the processing of the fruits and analysis of their functional properties.

Material procurement: Fresh African elemi fruits (*Canarium schweinfurthii*) were purchased from Obollo Afor market in Nsukka, Enugu state Nigeria.

Production of African elemi flour

African elemi (*Canarium schweinfurthii*) fruits were cleaned and the pulp was sliced thinly from the kernel using a kitchen knife. The sliced pulps were then oven-dried using a hot air circulatory oven (model QUB 305010G, Gallenkamp, UK). The dried pulp was

milled using a grinding mill (Gx160-5.5hp). The dried pulp was divided into two portions. One part was defatted with a Soxhlet extractor apparatus (Soxhlet extractor Bomex 500ml Quick fit glass), a heating mantle (500ml, 250W, 110V, Electric Temperature Regulation Heating Mantle, Sleeve, US Plug), and analytical grade ethanol. For each batch of extraction, 50g of the ground pulp was loaded in a folded 24cm Whatman filter paper and the Soxhlet apparatus was assembled. Analytical grade ethanol (250ml) was poured into a 100ml round bottom flask of the

apparatus and heated to 50 °C using a heating mantle. The extraction process lasted for 4 hours. After the oil extraction, the remaining pulp left was removed from the Soxhlet apparatus and dried in an air circulatory oven (model QUB 305010G, Gallenkamp, UK) at 40 °C for 18 hours. This was done to remove the solvent from the pulp flour. The solvent free pulp flour was then re-milled using a grinding mill (Gx160-5.5hp) to achieve finer flour texture and packed in low density polyethylene bag and stored at room temperature until needed.

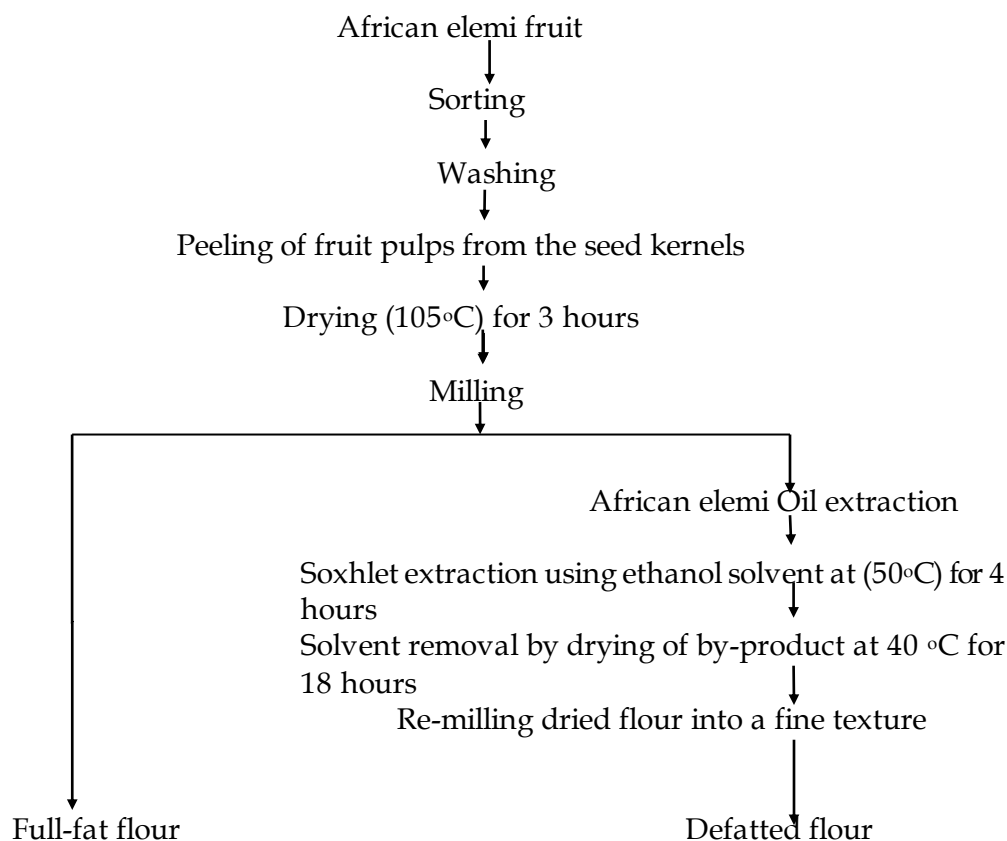


Fig. 1: Production of full fat and defatted African elemi flour

Functional properties determination

The determinations of the functional properties of the flours were carried out at the Home Science and Management analytical laboratory, University of Nigeria, Nsukka.

Bulk density

The bulk density of the flour was determined by the method described by Kaushal et al (2012). In this method, the flour samples were gently filled into 10 ml graduated cylinders, previously tared. The bottom of each cylinder was gently tapped on a laboratory bench several times until there was no further diminution of the sample level after filling to the 10 ml mark. Bulk density was calculated as the weight of sample per unit volume of sample (g/ml).

Water absorption capacity

The flour samples (1g) each were mixed with 10 ml of water in a centrifuge tube and allowed to stand at room temperature ($30 \pm 2^\circ\text{C}$) for 1 hour. It was then centrifuged at 2000 rpm for 30 minutes. The volume of water on the sediment-water was measured. Water absorption capacities were calculated as ml of water absorbed per gram of flour (Oke et al., 2020)

Least gelation concentration

The least gelation concentration was determined by the method of Eke-Ejiofor (2021) with slight modifications. Sample suspensions (10%, 20% w/v) were prepared in a test tube and heated in a boiling water bath for 1 h followed by rapid cooling under running cold tap water. The test tube was further cooled for 2 hours at 4°C . The least gelation concentration was determined as the

concentration when the sample from the inverted test tube did not fall down or slip.

Emulsion capacity and stability

The flour samples (2g) each and distilled water (100ml) was blended for 30 minutes in a Moulinex blender (model dep 3, France) at high speed (Ca. 100rpm). After complete dispersion, oil was added from a burette in streams of about 5ml. Blending continues until there was separation into two layers. Emulsification determinations were carried out at 30°C and expressed as grams of oil emulsified by 1g of flour. Briefly, the sample of 4g was dispensed in distilled water (100ml). 100ml of oil was added at the rate of 12.5 per second while blending. Each sample was blended in a Moulinex blender at high speed for additional 60 seconds and transferred into a 250ml graduated cylinder. Volumetric changes in foam, oil, and aqueous layers were recorded after three hours (Ukpong et al., 2021).

Statistical analysis

All analyses were performed in duplicates and results were expressed as mean values \pm standard deviation (SD). One-way analysis of variance (ANOVA) was used in analyzing the means. The Tukey Pairwise comparison was used to determine the difference between means of the tested parameters using Minitab 21 Statistical software. Statistical significance was accepted at $p < 0.05$.

Results

Functional properties of full fat and defatted African elemi pulp flour.

Table 1 presents some of the functional properties of full fat and defatted flour

African elemi flour. The water absorption capacity of the full-fat flour (387.13%) significantly increased (588.6%) upon defatting ($p < 0.05$). The emulsion capacity (4.17%) and emulsion stability (5.42%) of the full-fat flour also increased (45.84%) significantly when defatted ($p < 0.05$).

Table 1: Functional properties of full fat and defatted African elemi pulp flour

Functional properties	African Elemi flour	
	Full-fat	Defatted
Water absorption capacity (%)	387.13±5.59 ^b	588.6±59.5 ^a
Emulsion capacity (%)	4.17±21.2 ^b	45.85±3.22 ^a
Emulsion stability (%)	5.42±1.77 ^b	45.85±5.87 ^a

*Values are means ± standard deviation of duplicate determination.

*Means that do not share a letter are significantly different ($p < 0.05$)

Figure 2 shows the least gelation capacity of the flours. Defatting significantly increased the gelation concentration of African elemi flour. The full fat flours had the highest gelation concentration (20%) while the defatted flour had the least gelation concentration (10%) ($p < 0.05$) density (0.34g/ml). Defatting significantly decreased the bulk density of African elemi flour ($p < 0.05$).

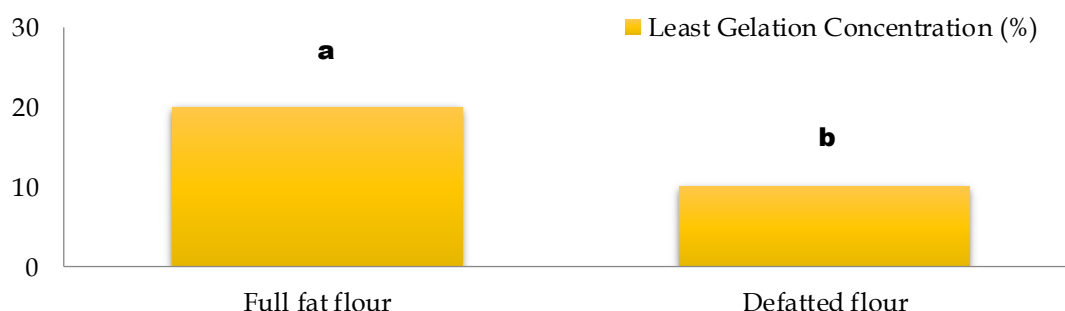


Fig 2: Least gelation concentration of full fat and defatted African elemi flour

*Values are means of duplicate determination.

*Means that do not share a letter are significantly different ($p < 0.05$)

Figure 3 shows the bulk density of the flours. The full fat flours had the highest bulk density (0.56g/ml) while the defatted flour had the lowest bulk.

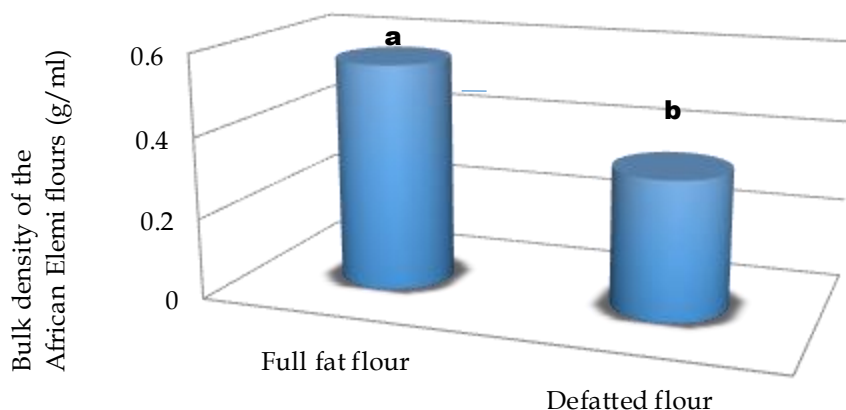


Fig. 3: Bulk Density of full fat and defatted African elemi flour

*Values are means of duplicate determination.

*Means that do not share a letter are significantly different ($p < 0.05$)

Discussion

Water absorption capacity (WAC)

The water absorption capacity of the full fatted flour was seen to increase upon defatting. This finding corroborates with other similar studies on the water absorption capacity of the full fat and defatted flours of moringa oleifera kernel, and cashew kernel (Ogunsina et al., 2010; Aloba et al., 2009). The values obtained for the defatted African elemi flour are similar to the water absorption values of defatted cassia fistula flour (Akinyede & Amoo, 2009). Generally, the values recorded in this study are comparatively higher than the values obtained from a study on melon seed flours (Omowaye-Taiwo et al., 2015). According to Hasmadi et al (2020) water absorption capacity measures the ability of flour or starch to hold water against gravity that can comprise of bound water, hydrodynamic water, capillary water, and physically entrapped water. The increase in the water absorption capacity of the African elemi flour may

be due to defatting. The process of defatting exposes the water binding sites present on side chain groups of proteins that were previously blocked in a lipophilic environment (Akinyede & Amoo, 2009). This allows the proteins to interact well with the solvent thereby causing an increase in the water absorption capacity of the flour. According to Omowaye-Taiwo et al (2015) defatted flours with higher water absorption capacity may suggest that they can be better thickeners in some food formulations than full-fat flours.

Emulsion capacity and stability

Emulsion capacity and stability of flours reflect their ability to emulsify in oil and be able to resist the changes in its physicochemical properties over a period of time (Singh, 2005; Awuchi et al., 2019). The emulsion capacity and stability of the African elemi full-fat flour significantly increased when defatted. The increase in the emulsion capacity and stability of defatted African Elemi flour observed in this

study compares favorably to a previous report on defatted maize germ flour (Siddiq et al., 2009). This observed increase may be attributed to the process of defatting which had a positive effect on the proteins in the flour (Akinyede & Amoo, 2009). During food processing, proteins are responsible for the increase in the emulsion capacity and emulsion stability of foods such as mayonnaise, frozen desserts, salad dressings, and comminuted meat products (Kaushal et al., 2012). Therefore, the increase in the emulsion capacity and stability of the defatted African elemi flour is an indication that they could serve as additives for the stability of fat emulsion in the production of soups, bakery and meat products.

Least gelation concentration (LGC)

Defatting significantly increased the gelation concentration of African elemi flour. The full-fat flours had the highest gelation concentration while the defatted flour had the least gelation concentration. According to Ohizua et al (2017) the least gelation concentration (LGC) of flour describes the ability of the flour to be able to form a gel in a measured volume of water. The higher the LGC, the higher the quantity of flour needed to form a gel, and the lower the LGC the better the gelling ability of the flour (Ohizua et al., 2017). The defatted African elemi flour formed a gel a significantly lower concentration compared to the full-fat flour. This indicates that the defatted African elemi flour may be used in the formulation of curd or as an additive in other gel-forming materials in food products. The LGC values obtained in this study are higher than the values reported by Eke-

Ejiofor et al (2021) orange-flesh sweet potato starch, soya bean, and groundnut flour. This variation may be attributed to the difference between the chemical components of the flours. The LGC measures the least protein concentration that forms a gel when inverted in a tube (Chandra et al., 2015). It is important to note that existing literature has shown that groundnut and soya bean is among the richest sources of plant protein. This explains why their flours may have a lower gelation concentration than some flours from other sources like African Elemi. However, the LGC values recorded in this study compare favorably to that of rice and taro flours reported by Kaushal et al (2012).

Bulk density

The full-fat flours had the highest bulk density while the defatted flour had the lowest bulk density. Raigar and Mishra (2015) described bulk density as a functional property of flours that measures the mass of the many particles of flour material divided by the total volume they occupy. The bulk density is an important factor considered in the determination of packaging requirements, material handling, and application in wet processing in the food industry (Ocloo et al., 2010). According to David (2015), food materials with low bulk density may be lighter and easier to transport however, they occupy a greater space and require more packaging material per unit weight and thus incur high packaging costs. This implies that African elemi full-fat flours may require less packaging material as a result of their bulk density compared to defatted African elemi flour which has a lower

bulk density. Apart from the packaging material advantage flours with high bulk density have, Ocloo et al. (2010) reported their suitability as thickeners in food preparations. Comparatively, flours with low bulk density indicate they can be used as potential ingredients in the formulation of complementary foods where low bulk density is required (Suresh & Samsher, 2013). This indicates that African elemi full fat and defatted flours can be used for the food formulation suitable for adults and young children. The bulk density of roasted Bengal gram flour and tiger nut flour (Raigar & Mishra, 2015; Oladele & Aina, 2007) compares favorably with the bulk density of African elemi full-fat flour.

Conclusion

Results from this study revealed that the functional properties of African elemi pulp were improved after defatting. However, the full-fat and defatted flours both have potential in the food industry as a thickener, binding agent, and complementary food formulation.

Recommendation

Based on the research findings of this study, it was recommended that further research studies be carried out on different processing methods on the on the functional properties of African elemi flour. Also, studies on the various applications of the flours in several food formulations should be carried out.

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Gender Perspective to Assessing Football Fandom Participation, Team Identification and Socialization Factors among Undergraduate Students of Universities in Enugu State

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Abstract

This study examined football fandom participation, team identification and socialisation factors among undergraduate students of two universities in Enugu State. The study adopted a descriptive cross-sectional survey of 600 students selected through simple random sampling technique in multi-stages. Three objectives and three hypotheses guided the study. Sports Fandom Questionnaire, Sport Spectator Identification Scale and a structured questionnaire were used for data collection. Data analyses were performed with IBM-SPSS application, version 23, using frequency, percentage, mean and standard deviation statistics. Chi square and independent sample t-test were used to test the hypotheses. The study found that many of the respondents were fans of football clubs mostly in favour of the European league. A greater proportion of females (61.5%) than males (59.8%) identified as football fans. However, male fans showed higher levels of fandom participation, but did not differ much in the level team identification than female fans. Club performance, and personal admiration of players were the major factors motivating students to become football fans. Football fandom therefore is a popular culture and an integral part of young people's lives. It is considered an important leisure activity, plays a crucial role in the attainment of social identity and offers strong basis for digital connection with peers around the world.

Keywords: Football fandom; Team identification; Socialisation factors; Undergraduate students; Nigeria.

Introduction

Football is one of the most popular games all over the world. The Federation Internationale de Football Association (FIFA) estimated that there are approximately 250 million football players and over 1.3 billion people who identify with football in various ways (Bernard et al., 2018). Football

identification does not only involve being a player in national or international teams, but could also involve being an individual football fan or part of a fan community known as football fandom (Onwumechili & Akindes, 2014).

Football fandom refers to the group of people who identify as fans and

passionately devote themselves to a particular football team to the degree that they feel the team belongs to them (Givi & Turkmani, 2018). Porat (2010) stated that football fans have high regard for the game of football such that they could relate personally with the losses and victories of their preferred teams. They are willing to spend a significant portion of their daily time and energy with activities involved in football experiencing a wide range of the pleasant and painful emotions evoked by football matches (Silva & Casas, 2017). Rationis (2020) opined that true fans identify with their favourite teams by living the experiences of football matches, cooperate with other fan members and participate in club rituals.

Identifying various factors that could attract fans towards a particular team or club, Agbonna, Nnajieta and Anyakoha (2016) named brilliant performance of the club manager or captain, extraordinary goal scoring skills of the players, and the personality of a particular manager or player as key. In their study, Melnick and Wann (2011) found that friends, parents, and schools were the major factors influencing fan socialisation. As further observed by Parry, Jones and Wann (2014a), family members', especially fathers' involvement in fan activities, was the major socialisation factor. Lloyd Slogan identified six motivating reasons for participating in fandom, namely a sense of belonging by identifying with a team, leisure or break from routine, stimulation, therapeutic relief from tension and aggression, entertainment and vicarious achievement (Dogari, Apuke, & Idi, 2018; Onyebueke, 2015).

Football fandom manifests in specific behaviours that is beyond being an ordinary spectator. Football fans actively engage various available means to participate in the activities of their favourite clubs or teams. They engage with other fans in getting up to date information on their team and specific players. Rationis (2019) explained that the process is like apprenticeship involving years of instruction, practice of dedication and of demonstrating one's knowledge of team statistics among other fans. According to Theodorakis, Al-emadi and Wann (2017), being a fan involves attending live football events, watching football matches on television, listening to football matches and programmes on the radio, following football events on the internet, discussing football via social media, and discussing football with friends and relatives. Other behaviours include buying items representing one's favourite football club, organising and participating in a special day celebration of the club (Adegoke, 2017). Absten (2011) observed that individuals who identify highly with a team would likely attend more matches, pay for more tickets, and spend more money on club branded items and remain loyal irrespective of the team's performance than those with low identification. Football fandom is generally a life-long venture undertaken by people during the youthful years and continues well into old age (Porat, 2010).

Football has been recognised as a game that unites diverse people, providing them with a common ground for interaction, shared identity and a feeling of camaraderie (Rahmati et al., 2014). This is mostly evident among

fans who identify and support a particular team of players. A report of various studies in U.K by COPA90 Media (2018) showed that football fandom has undergone revolution in recent times due to the proliferation of social media platforms, producing “a new generation of fans who are relating to and changing the game of football in many new ways”. These youths mostly between 16-24 years of age, have more access than the previous generations to current activities of football clubs across geographical boundaries. Watching live football matches through You tube, and discussing football matters via Facebook, twitter and other social media have replaced much of live attendance to football stadia or the traditional television broadcast among youths (COPA90 Media, 2018). This digital revolution in football spectatorship, has facilitated more convenient participation in football related matters and consequently has made fandom a crucial part of growing up among youths in the twenty first century.

Scientific enquiries into the patterns and dynamics of football fandom among youths often adopts the social identity theory developed by Tajfel and his colleagues in the 1970s. The theory espouses that individuals form their self-concept and identity from the expectations of the groups they belong to, thus providing people with connectedness to in-groups while differentiating them from out-groups (Goodlad, 2018). According to the theory, individuals’ attachment to a group especially a successful one, boosts their self-esteem and helps them sustain their social identity (Leaper, 2011). In the process of football

identification, individual fans develop strong emotional ties with other fans of their favoured team, forming what is similar to ethnic or religious groups. The achievement of the team becomes their personal achievement and what Slogan Lloyd termed vicarious achievement; and the loss of their team is also considered their personal loss (Dogari et al., 2018). This has led to the two popular theories of emotional coping mechanisms known as BIRGing and CORFing. BIRGing refers to basking in reflected glory in which fans enhance their ego by transferring the success of their favourite team to themselves; CORFing (cutting of reflected failure) on the other hand is an ego protection strategy whereby fans dissociates themselves from the losses of their clubs (Dwyer et al., 2016). Studies reveal that fans that identify more strongly with their teams were likely to appropriate the victories of their favourite team, while less identified fans were more likely to dissociate from their teams’ poor performances (Ashlock, 2012). However, highly identified fans could also CORF by blaming their team’s loss on outside factors such as referee bias, and administrative loopholes instead of players’ poor performance. Ashlock (2012) referred to this mechanism as quasi BIRGing. It is not yet certain if there is gender disparity in the ego enhancement or ego protection function of football fandom among youths.

Until recently, the game of football had been widely a male-dominated game, both in participation as players and as fans. However, the demographics in which men were more frequently involved in fandom is rapidly changing (Wolensky, 2018).

Chemi (2014) similarly observed a growing trend of women fans of the U.S national football league. The Nigerian population is not left out in the trend. With the influx of digital communication devices, viewing football activities at the comfort of one's home instead of stadium and commercial viewing centres has become more favourable. This has increased the opportunity for more women to actively participate in soccer fandom (Tade, 2020). Various studies observed that males had significantly higher levels of fandom and team identification than females (Theodorakis et al., 2017; Parry et al., 2014a; Melnick & Wann, 2011). However, female football fans are gradually on the increase in recent times as observed by Chemi (2014). Hence, researchers are of the opinion that it is imperative to explore the dynamics of football fandom within the context of gender (Eskandari, 2022). The imports of these scientific inquiries are to highlight the prospects for increased female involvement in football related careers, given the recent economic benefits attached to the football profession.

Undergraduate students are mostly youths who are in their active and impressionable stage of life. Group identification is a backbone for building and maintaining their self-concept and esteem (Leaper, 2011). Through collective fandom activities, they could draw strength to navigate their academic lives and therapeutically work through stresses and tensions (Dogari et al. 2018). Various studies have been carried out across the globe which highlighted cultural dynamics of sports and football fandom among youths. They include the study of U.S fans (D.

L. Wann et al., 2001), Greek fans (Theodorakis & Wann, 2007), Australian fans (Melnick & Wann, 2011), U.K fans (Parry et al., 2014), Qatari fans (Theodorakis et al., 2017) and Iranian fans (Givi & Turkmani, 2018). The findings all suggest that fandom can have profound influence on modern societies and plays a central role in people's health and socialization, especially among young people irrespective of gender. Therefore, this study is aimed at making an enquiry into the contribution of gender to the dynamics of football fandom participation, team identification and socialization factors among undergraduate youths in Enugu state, Nigeria.

Objectives of the study

The study aims to identify the gender interaction in;

1. football fandom participation among the respondents;
2. the level of football team identification and
3. the football fandom socialising factors among the respondents.

Hypotheses

- 1: There is no gender disparity in football fandom participation among the respondents.
- 2: Male and female participants will not significantly differ in their level of team identification.
- 3: The mean responses of male and female participants will not be significantly different on socialization factors of football fandom.

Methodology

Study design: The study adopted descriptive cross-sectional survey research design.

Population for the study: The study population comprised all the students enrolled as at 2018/2019 session in the two public universities in Enugu state. This gave a total population of 45,576 students from 10 faculties in University of Nigeria and 20,884 students from 5 faculties in Enugu State University of Science and Technology (ESUT).

Sample selection: The sample size for the study was a total of 600 undergraduate students comprising 326 from the University of Nigeria and 275 from ESUT. The selection was done in multi-stages; first by randomly selecting 30% of the faculties in the universities. This gave three out ten faculties in the University of Nigeria and two out of five faculties in ESUT. The faculties selected were Agriculture, Arts and Engineering from University of Nigeria; faculties of Education and Engineering from ESUT. The next stage involved random selection of 10% of the student population in each faculty. Two departments were randomly selected from each faculty giving a total of ten departments. The sample for each faculty was then randomly selected in equal proportion from the two selected departments. The selected participants comprised 71% females and 29% males within average age range of 19-21 years. Nineteen percent were first year students, 29% final year students and 51.5% other year levels. Majority (91.7%) were single, 67.3% lived in the school hostels, 17.5% lived in off campus accommodations, and 15.2% came from home. A greater proportion

(61.5%) of females than (59.8%) of males identified as football fans. The most preferred clubs were European league (68.3%) and the most favoured teams were Barcelona (24.9%), Juventus (16.9%) and Manchester United (16.7%).

Instruments for data collection: A set of pre validated survey questionnaires were used to obtain data for the study. The first section was structured to obtain data on the respondents' demographics such as gender, institution, and academic level. The second section was a standardized instrument known as the Sports Fandom questionnaire (SFQ) by Wann (2002) which was adapted to obtain data on football fan status of the respondents. The SFQ contains five items rated on 8-point Likert-type scale of very strongly disagree to very strongly agree, but a 5-point scale from 1 (strongly disagree) to five (strongly agree) was used for this study for easier administration and analysis. An example item is, "My friends consider me to be a football fan." Higher ratings for items indicate a more likelihood to be soccer fan. The overall total scores of the respondents were used to categorize them into fans and non-fans of football.

The third section contained items on football fandom participation and socialisation factors. The items were adapted from the questionnaire used by Theodorakis et al. (2017). Data on football fandom participation was rated on a 4-point scale of 1= never, 2 = rarely, 3 = occasionally and 4 = frequently. The items of the socialisation factors were rated on 5-point Likert scale, ranging from 1 - 5 which corresponded to strongly

disagree to strongly agree. Higher ratings indicate higher frequency of participation and agreement respectively.

The fourth section was the Sport Spectator Identification Scale (SSIS) by Wann & Branscombe (1993). This was used to measure the level of team identification. It is a seven-item measure of identification with a team. Participants respond to items along an 8-point Likert-type scale, from 1 (low identification) to 8 (high identification). One of the items is, "How important to you is it that this team wins?" Higher ratings indicate a higher level of identification with a football team. The overall mean responses of 1-3.4 were categorized as low team identification, 3.5-5.4 = moderate identification, while ≥ 5.5 = high identification. Cronbach's alpha coefficient for SFQ, SSIS and socialization factor questionnaire in this study were 0.926, 0.913 and 0.930 showing high levels of internal consistency.

Procedure for data collection: Six hundred copies of the questionnaire were hand distributed to the respondents with the aid of two research assistants. The respondents filled the questionnaires and they were collected back immediately. The participants gave their consent by signing a written consent form. The voluntary nature of participation and confidentiality of the data were clearly explained to the participants after which they signed the form.

Data and statistical analysis: Data were analysed with IBM-SPSS software, version 23. K-mean cluster analysis was

used to classify the respondents into fans and non-fans. Data on football fandom participation were summarised in frequencies and percentages and overall mean score with the cut-off mean score of 2.5. Data on Socialisation factors were analysed using means and standard deviation with 3.5 as the cut-off mean score for acceptability. Chi square and t- test were used to test the hypotheses. Significant levels were established at $p < 0.05$.

Results

Football fandom participation among the respondents

Table 1 shows football fandom participation among the participants according to gender. In general, the participants reported participating in football activities in all the listed ways (mean > 2.5). They engaged mostly by viewing matches on television/viewing centres (mean = 5.04 ± 2.14) and discussing football matters with friends and family (mean = 5.03 ± 2.48). Males showed more frequent participation than the females in football matters; attendance to live matches (49.0% males, 40.8% females); watching football events on television/viewing centres (73.1% males, 55.0% females); listening to football news on radio (68.3% males, 56.9% females), social media (64.5% males, 58.4% females), and discussion with friends and relatives (71.4% males, 63.7% females). Hypothesis 1 was mostly rejected as male participants showed significantly higher participation in fandom than females except in the item of following football matches on the internet.

Table 1: Percentage Responses on Football Fandom Participation by Gender

	Never F (%)	Rarely F (%)	Occasionally F (%)	Frequently F (%)	Chi- square values	Mean (SD)
Attendance to live football matches						
Males	8 (7.7)	12(11.5)	33 (31.7)	51(49.0)	13.67*	3.94 (2.40)
Females	20 (7.6)	77 (29.4)	58 (22.1)	107 (40.8)		
All participants	28 (7.7)	89 (24.3)	91 (24.9)	158 (43.2)		
Watching matches on television/viewing centres						
Males	0 (0.0)	10 (9.6)	18 (17.3)	76 (73.1)	12.55*	5.04 (2.14)
Females	7 (2.7%)	53 (20.2)	58 (22.1)	144 (55.0)		
All participants	7 (1.9)	63 (17.2)	76 (20.8)	220 (60.1)		
Listening to football news on radio						
Males	7 (6.7)	4 (3.8)	22 (21.2)	71 (68.3)	9.78*	4.36 (2.60)
Females	49 (18.7)	5 (1.9)	59 (22.5)	149 (56.9)		
All participants	56 (15.3)	9 (2.5)	81 (22.1)	220 (60.1)		
Follow football events on internet						
Males	0 (0.0)	18 (17.3)	14 (13.5)	72 (69.2)	4.65	4.39 (2.65)
Females	0 (0.0)	73 (27.9)	35 (13.4)	154 (58.8)		
All participants	0 (0.0)	91(24.9)	49 (13.4)	226 (61.7)		
Discuss matches on social media						
Males	2 (1.9)	12 (11.5)	23 (22.1)	67 (64.5)	12.91*	4.42 (2.58)
Females	12 (4.6)	65 (24.8)	32 (12.2)	153 (58.4)		
All participants	14 (3.8)	77 (21.0)	55 (15.0)	220 (60.2)		
Discuss matches with friends and family						
Males	0 (0.0)	14 (13.5)	16 (15.4)	74 (71.2)	8.59*	5.03 (2.48)
Females	0 (0.0)	70 (26.7)	25 (9.5)	167 (63.7)		
All participants	0 (0.0)	84 (23.0)	41 (11.2)	241 (65.8)		

F; frequency, *; values are significant at $p < 0.05$

Level of team identification among the respondents

Data on figure 1 shows that there was generally a moderate level (58.0%) of team identification among the respondents. About a third (30.8%) of the participants identified highly with their favourite teams and a few (11.2%)

had low level of identification with their teams. Male and female participants showed no significant difference in the level of team identification (Chi square value = 2.72, $p > 0.05$), therefore hypothesis 2 was not rejected.

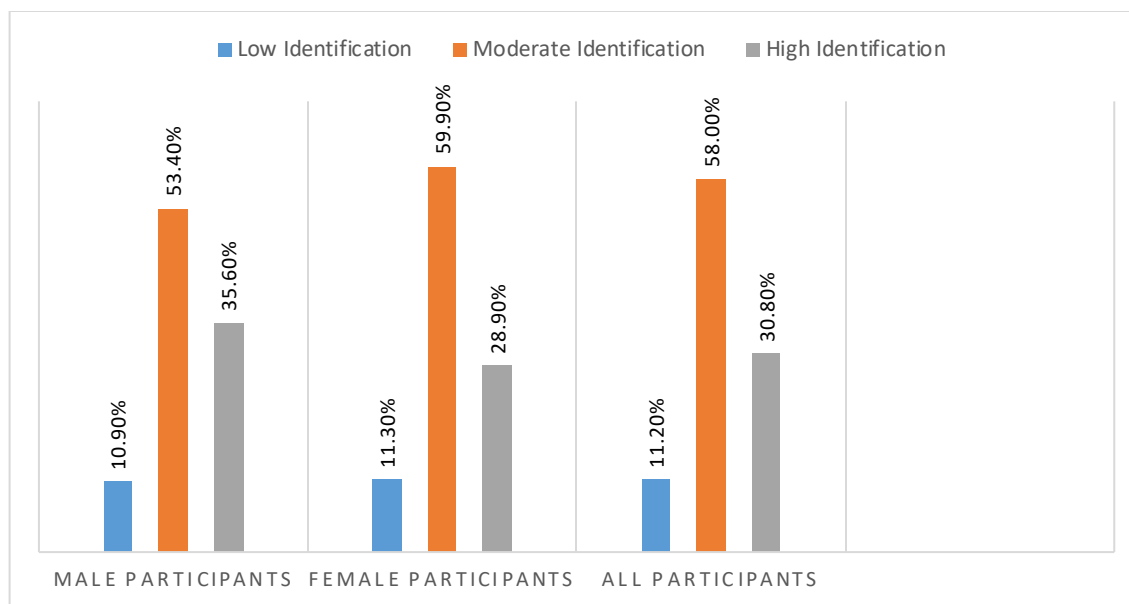


Fig. 1: Level of team identification among the respondents by gender; Chi square value = 2.72, $p = 0.26$

Socialisation factors of football fandom among the respondents

Table 2 shows data on the socialisation factors influencing football fandom among the respondents by gender. Among the males, major factors were admiration for players (mean = 3.99), club performance (3.97), means of leisure and recreation (3.78), sense of belonging (3.73) and personal love for football (3.71). Factor identified among females were club performance (4.06), admiration for player/players (4.04), means of leisure and recreation (3.89) sense of belonging (3.73) and personal

love for football (3.72). Among all participants, club performance (4.03) and admiration of a particular player/players in the club (4.3) were the two highest ranking factors. Mother as a fan (2.71) and club representing one's country or continent (2.69) were not factors. The female participants disagreed more strongly on the item; "the club represents my country/continent" than the male participants. Hypothesis 3 therefore is rejected only on this item.

Table 2: Socializing factors of football fandom among the respondents by gender

Variables	Males Mean (SD)	Females Mean (SD)	Total Mean (SD)	Remark	t-value
The club's success/performance	3.97 (1.21)	4.06 (1.08)	4.03 (1.12)	Agree	0.92
Admiration for a particular player or players in the club	3.99 (1.18)	4.04 (1.01)	4.03 (1.06)	Agree	0.50
Means of leisure and recreation	3.78 (1.28)	3.94 (1.04)	3.89 (1.12)	Agree	1.65
Football fandom offers me a sense of belonging	3.73 (1.44)	3.73 (1.31)	3.72 (1.35)	Agree	0.04
Personal love for football game	3.71 (1.29)	3.72 (1.23)	3.71 (1.18)	Agree	0.09
Enjoy the atmosphere of the stadium	3.50 (1.32)	3.58 (1.26)	3.56 (1.28)	Agree	0.67
Admiration for the coach of the club	3.41 (1.21)	3.36 (1.45)	3.37 (1.16)	Agree	0.42
My sibling is a fan of the club	3.22 (1.37)	3.19 (1.38)	3.19 (1.38)	Agree	0.29
My father supports the club	3.20 (1.29)	3.03 (1.32)	3.08 (1.30)	Agree	1.43
My friends/roommates are fans of the club	3.11 (1.35)	2.96 (1.23)	3.01 (1.26)	Agree	1.34
My mother is a fan of the club	2.74 (1.34)	2.70 (1.36)	2.71 (1.35)	Disagree	0.32
The club represents my country/continent	2.87 (1.44)	2.60 (1.35)	2.69 (1.38)	Disagree	2.19*

SD; standard deviation, *; values are significant at $p < 0.05$

Discussion

The study showed that there were more female than male football fans among the study participants. The most preferred clubs in this study were the European Premiers League, such as Barcelona, Juventus and Manchester United, thus highlighting the low patronage of local football teams, as previously observed by Dogari et al. (2018) and Onyebueke (2018). This preference to European clubs has been attributed to media popularity given to European league matches across countries (Onyebueke, 2015). Onwe (2019) observed that Nigerian football lovers prefer to be fans of European clubs not only because they claim that European league matches are more intriguing and entertaining than Nigerian league matches, but also that identifying with them serves as a means

of self-extension and improvement of young people's self-image. Thus, football fandom could be serving the purpose of vicarious achievement among young people, as observed by Slogan Lloyd (Dogari et al., 2018).

This study also found that majority of the participants engaged with their club activities through televisions and viewing centres, discussing football activities and news with friends and families both offline, on the internet and on social media as well as listening to matches and football news on radios. This finding buttresses the impact of digital technology in redefining the ways football fans practice their fandom activities. Given the fact that the most favoured club base was the European league, Nigerian-based fans especially undergraduate students, have the more convenient options of following up the

activities and news of their favourite clubs using available communication gadgets and media. Exploring the gender perspective of soccer fandom, similar to the findings of Theodorakis et al. (2017), Parry et al. (2014a), and Melnick and Wann (2011), male fans were found to participate in football activities more than male fans in the aspects of attendance to live matches, watching football events on television/viewing centres, listening to football news on radio, social media interaction and discussion with friends and relatives. The gender difference may be associated with the fact that males show greater interest to engage in more public display of football activities than females in the society. This situation may not be surprising given the fact that public football spectatorship had hitherto been in the masculine domain. However, with the changing trend of increased female involvement in soccer fandom, gender balance may soon be achieved in overall football participation in the near future. This balance is hoped to encourage more women to show interest and pursue a career in any aspect of professional football; as players, referees and even club administrators.

The study further found moderate to high level of team identification among the participants in general. In congruence with the social identity theory, identifying with a group especially successful one, is very critical for developing self-identity and boosting the self-esteem of young people (Leaper, 2011). In addition, young people find inner strength and morale to go through academic and personal stress as they engage in collective fandom activities (Dogari et

al. 2018). Parry et al. (2014b) also observed high level of team identification and fandom among UK fans of English Premier League, although at a lower level than the findings of this study, suggesting that Nigerians could be patronising the European football clubs much more than the owners of the clubs. Further finding showed that gender was not found to be associated with the level of team identification. This indicates that young people irrespective of gender, are emotionally connected to their favourite clubs, sharing in the victories and losses of the clubs. This finding suggests that there might be no gender disparity in the theory of BIRGing and CORFing as it concerns enhancement and protection of fans' self-esteem. When fans, notwithstanding the gender, identify with their favourite teams strongly enough, they feel emotionally attached to the team. The fans tend to personalize the team's victories and deal with losses by dissociating themselves from the failure or making excuses for the team (Ashlock, 2012).

Club performance and admiration of particular player/players were found to be the two major factors that motivated young people to become football fans. The findings undermined the influence of family members, friends and community as major socialisation agents of football fandom observed in other cultures (Parry et al., 2014; Theodorakis et al., 2017). The pattern of fandom among Nigerian audience was mostly performance-based and therefore could be dynamic. This implies that if a favourite club stops performing expectedly, they might gradually lose the patronage of their fans. The findings are in

consonance with that of Akanle and Fageyinbo (2015) who opined that in Nigeria, the fan base of football clubs is flexible depending on the overall performance of the clubs over time. Similarly, Agbonna et al. (2016) observed that fans are attracted to a particular team because of brilliant performance of the club manager or captain, extraordinary goal scoring skills of the players, and the personality of a particular manager or player. Hence, as team achieves success in the field, fans become more emotionally connected to them.

Further finding showed that leisure and recreation, sense of belonging, personal love for football, were among the factors that influenced the participants to become fans, thus highlighting social identity and connectedness as benefits of football fandom among young people (Rationis, 2020). The finding suggest that engaging in football activities could be an avenue through which young undergraduate students relax themselves mentally and physically in between demanding academic activities. They also tend to find a social bearing as they connect with other lovers of football, particularly members of their football "tribe." This finding corroborates the views of Lloyd that individuals could participate in football fandom for sense of belonging, relief from tension and stress, and for leisure and entertainment (Dogari et al., 2018). Influence of father, siblings, friends and roommates were also observed as socialising factors of football fandom, though not as much as were observed by Parry et al. (2014), Melnick and Wann (2011) and Theodorakis et al., (2017). Influence of family and friends

as traditional socialisation agents have long been established; it is therefore not surprising that they also play a role, though minimal in this context, in shaping how young people get connected with football teams and engage in soccer related activities.

Conclusion

Football fandom is a popular culture and an integral part of young people's lives. It is considered an important leisure activity, plays a crucial role in the attainment of social identity and offers strong basis for digital connection with peers around the world. As a possible representative sample of other Nigerian youths, the undergraduate students prefer European league clubs to local football clubs. They invest a lot of time and resources discussing the activities of their favourite clubs with friends and relatives and follow up with other fans on the internet and social media. Identification with a football team was not only observed among the male students but also the female students at a remarkable rate. However, the level of team identification and participation in fandom activities was higher among male students. This is reflected in more frequent attendance to live matches and discussion with friends and relatives. Factors that influenced the respondents' football fandom behaviours were not predominantly the traditional socialisation agents such as family, school and community. Rather, they were mostly based on the admiration of the performance and personality of the players and clubs as well as for the personal benefits derived from the game of football such as leisure and recreation, attainment of sense of

belonging and personal love for football. This implies that identifying with the game of football as fans is a suitable leisure activity which improves the young people's social capital and could be of emotional, psychological and social benefit to them while pursuing their academic endeavours. Football fandom practices could offer students safe avenues for relieving the tensions and stresses of academic life and has the potential to keep them off dangerous indulgences such as cultism, drugs and other social vices.

Recommendation

Based on the findings of the study it was recommended that Ministry of sports should collaborate with organization and individuals interested in the promotion of local clubs in the country as this will not only promote the nation's economy but will assist in personal development of her citizens.

Acknowledgement

The authors wish to acknowledge Writewell Consult for proofreading this article and making valuable inputs in the work.

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Perceived Impact of Agrochemicals on Human Health and Environment among Farmers in Nsukka Agricultural Zone, Enugu State

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Abstract

The aim of this study was to determine the impact of agrochemicals on human health and environment. Three specific objectives and one hypothesis guided the study. Descriptive cross-sectional survey research design was adopted for the study. The study was conducted in Nsukka agricultural zone among farmers. Population for the study was 5800 full-time farmers in Nsukka agricultural zone. Multi-stage sampling was used to draw a sample of 400 farmers. Instrument for data collection was a researcher designed questionnaire consisting of 15 items. The face validity of the instrument was established by three experts from the department of Human Kinetics and Health Education. Reliability of the instrument was established using split half method and reliability coefficient of .78 was obtained using Cronbach alpha. Data was collected by the researcher with the help of two research assistants from each community. Frequencies and percentages were used to analyze the data. Results indicated that high proportions (66.4%, 63.1%) of farmers indicated that agrochemicals impact negatively on health and environment respectively, and there was significant difference in the impacts of agrochemicals among farmers based on levels of education. The findings of the study concluded that high proportions of the farmers indicated that agrochemicals impact negatively on human health and environment. The study recommended that farmers association should periodically organize workshops to share opinions on the benefits, dosage and type of agrochemicals to reduce exposure to agrochemicals and its adverse effects on human health and environment.

Keywords: Perceived impacts, Agrochemicals, Health, Environment, Farmers, Nsukka

Introduction

Farming is an occupation and source of livelihood for many people in Nigeria especially among rural dwellers. Agriculture employs over 70% of the active labour force in Nigeria (Jones, et al., 2015). People engage in farming for family consumption as well as for commercial purposes. Agriculture

provides food, employment and raw materials for other industries. However, in order to increase agricultural yields for family consumption, make economic gains and ensure food security, farmers have to deal with various threats such as controlling weeds and pests. Muhibbullah and Sarwar (2018) referred to pests as natural enemies affecting

crops and may include weeds, insects, slugs, snails, rats and mice. Weed is any plant growing in cultivated ground to the injury of the crop or desired vegetation or to the disfigurement of the place; an unsightly useless, or injurious plant (Meena et al. 2020). Weeds and insects, if left unabated are capable of destroying entire crops and animals resulting in waste of efforts and economic loss. At subsistence level of agriculture, farmers use local methods to control pests such as fencing, setting traps, and building scare crows to scare birds and other animals. Farmers also used animal dung and household waste to enrich the soil, and fed animals with local grasses. But when farming is for commercial purposes, vast farm land is usually involved, requiring more extensive approach to controlling pests and weeds, and improving yield through the use of agrochemicals.

Agrochemicals are substances used to control weeds and pests as well as improve agricultural yields. Muhibbullah and Sarwar (2018) defined agrochemicals as a generic term for various chemical products, such as fertilizer, hormone, fungicide, insecticide, or soil treatment that improves the production of crops. Meena et al. (2020) indicated that any substance used to control, repel, or kill plant or animal life is a pesticide, and the group includes herbicides, insecticides and fungicides which are being used indiscriminately for ensuring higher productivity by eliminating or suppressing pest population. Sharma et al. (2019) stated that currently, two million tonnes of agrochemicals are used per year on the global basis, most of which are herbicides (50%), insecticides (30%) and

fungicides (18%) and other types such as rodenticides and nematicides. These farmers applying the agrochemicals may be ignorant of the toxic effects on the human health and environment, but focused on increasing agricultural products to maximize profits. Pesticide exposure even at low levels over a long period of time, can cause a variety of chronic human health problems, such as cancers, reproductive and endocrine disruption, neurological damage and immune system dysfunction (Awadh et al., 2018). Jallow et al. (2017a) observed that agrochemicals have become an integral part of present-day farming and play a role increasing agricultural productivity. Extensive use of agrochemicals can result in detrimental impacts on human health and environment.

Impacts of agrochemicals can be studied under the impacts on human health (farmers and consumers) and environment (air, water and soil). Detrimental effects of agrochemicals on farmers and consumers are enormous. World Health Organization (2019) noted that about (20%) of the approximately 800,000 people who die from suicide every year do so by ingesting pesticides. According to Huvistendahi (2013), farmers and agricultural workers are exposed to a wide range of pesticides in concentrations capable to impose adverse health effects. Furthermore, living very close to farm areas has been found to increase the risk of suffering from agrochemical pollution (Bombadi, 2017). Sharafi et al. (2018) reported that the most prevalent health symptoms among the respondents were irritation of eye, skin, throat and nose. Lekei et al. (2014) reported that the prevalent

symptoms among the farmers studied in Tanzania were skin irritation, headache and flu and that 68 per cent of farmers have felt sick after regular use of pesticides. Jallow et al. (2017b) reported that most farmers agreed that pesticide use, pose some risks to human health and the environment. These risks include eye, respiratory, skin, headache and breathing problems as a result of inhalation, mixing with food and exposed parts of the body (Muhibbullah & Sarwar, 2018). The minor health problems emanating from agrochemical applications among farmers can culminate to serious health problems such as skin cancer, throat cancer, blindness and even death.

Inappropriate use of agrochemicals affects not only the farmers and agricultural workers but also the consumers who use the agricultural products. This is because food crops moved into market for human consumption may still retain residue of the agrochemicals. High concentration of pesticides on agricultural products impact negatively on the human health and environment as has been reported by several studies (Franklin et al., 2017; Ighayebzadeh et al., 2016; Pasder et al, 2017; Pirsahel et al., 2016; & Sharafi et al., 2018). Excessive use of agrochemicals has also been found to affect the surrounding environment. Other researchers, Muhibbullah and Sarwar (2018) noted that pesticides can contaminate the soil, the air, water used for domestic purposes, the grasses for domestic animals and overall environment; Sharafi et al. (2018) noted that pesticides can enter fish and meat if there are livestock breeding places and fish ponds around the crop farm while Ram et al. (2020)

summarized that prolonged and indiscriminate use of agrochemicals adversely affected the soil biodiversity, agricultural sustainability and food security, bringing in long-term harmful effects on nutritional security, human and environment. This is because agrochemicals sprayed in agricultural fields can volatilized into the air contaminating the air and making it unfit for health. The agrochemicals can also be carried by run-off waters into the streams and rivers affecting the fishes and making the water unfit for human consumption. In addition, farmers often wash their tools and work clothes in nearby streams and river banks, which can as well contaminate the water sources. Nsukka agricultural zone, have different streams, rivers and springs which the indigenes depend on for agricultural and domestic purpose. There is the tendency that the agrochemicals can contaminate the water and its habitat.

Level of education and knowledge of farmers is a crucial factor in the selection and application of agrochemicals. Previous studies by (Franklin et al., 2017; Gaber & Abdel-Latif, 2012; Oliverira et al., 2012; Sharma et al., 2019; & Sheikh et al., 2014) which indicated that education is related to the impacts of agrochemicals among the farmers. The authors observed that educated farmers are more likely to attend training on agrochemicals and tend to observe the producer's instructions to minimize the adverse outcome and ensure safety, unlike the illiterate farmers.

Farmers in Nsukka agricultural zone produce different types of food crops such as yams, cocoyams, rice, maize, watermelon, cassava, cucumber,

pepper, vegetables and others; and rear animals such as cows, goats, sheep, and poultry. They are not left out in the use of agrochemicals to improve yield. Yet there are very limited studies on the perception of these farmers on the negative impacts of agrochemicals on human health and environment. Therefore, this study aims at filling this research gap.

Objectives of the study: Specifically, the study examined the:

1. perceived impacts of the use of agrochemicals on human health among farmers in Nsukka agricultural zone;
2. perceived impacts of the use of agrochemicals on environment among farmers in Nsukka agricultural zone and
3. determine the relationship between educational qualification and perceived impacts of use of agrochemicals on human health among farmers in Nsukka agricultural zone.

Hypothesis: There is no significance difference on the perceived impacts of use of agrochemicals on human health among farmers based on level of education.

Methods and Materials

Study design: Descriptive cross-sectional survey research design was adopted for the study.

Population for the study: Population for the study was all full-time farmers in Nsukka agricultural zone totally 5800 (Nsukka Agricultural Zone, 2021). Nsukka agricultural zone is one of the six agricultural zone in Enugu State. This zone is made up of three local government areas which are Uzo-

Uwani, Nsukka and Igbo-Etiti. Majority of the people in these areas are farmers who depend on farming as a source of livelihood.

Sample and Sampling Techniques: The sample for the study consisted of 400 farmers. The sample was selected using the formula described by Cohen, et al., (2018). Multi-stage sampling technique was used to draw the sample for the study. The first stage involved the use of purposive sampling technique to select two Local Government Area (L.G.A) out of three L.G.A's. in the Nsukka agricultural zone. Thus, Nsukka and Uzo-Uwani L.G.As were selected. Stage two involved the use of proportional sampling technique to select only the communities in the two L.G. As that have full-time farmers. Proportionate sampling was deemed necessary because majority of the people in Uzo-Uwani L. G.A. are full-time farmers. Four communities were selected from Nsukka LGA (Lejja, Ede-Oballa, Okpuje and Okutu while in Uzo-Uwani six (6) communities were selected thus: Adani, Nkpologwu, ogurugwu, Ugbene-Ajima, Ukpabi and Adabaa. Third stage involved the use of simple random sampling technique of balloting without replacement to select ten villages. The fourth stage is the use of purposive sampling to select 400 farmers comprising of 160 from Nsukka L. G. A. and 240 from Uzo-Uwani L.G.A.

Instrument used for data collection: Instrument for data collection was a researcher's structured questionnaire called perceived impacts of agrochemicals on human health and environment among farmers (PIAHHE), consisting of sixteen items. Ten items determined the impacts of

agrochemicals on human health while six items determined the impacts of agrochemicals on environment. Response options are “Yes” and “No”. Percentages of 0-19% was interpreted as very low, 20-39% as low, 40-59% as moderate, 60-79% as high and 80% and above as very high proportions

Validation of the Instrument: The face validity of the instrument was established by three experts from the department of Human Kinetics and Health Education.

Reliability of the instrument: Reliability of the questionnaire was established using split half method and reliability coefficient of .78 was obtained using Cronbach alpha.

Data Collection Techniques: Permission letter duly approved was obtained from the Chairmen of Farmers association and traditional rulers of the selected communities. Data were collected by the researcher with the help of two

research assistants from each community.

Data Analysis: Frequencies and percentages were used to analyze the data. Percentages of “Yes” 0-19% was interpreted as very low, 20-39% as low, 40-59% as moderate, 60-79% as high and 80% and above as very high proportions. The hypothesis was verified with Chi-square analysis at .05 level of significance.

Results

Result in Table 1 shows that generally, a greater proportion (66.4%) of farmers indicated that agrochemicals impact negatively on human health. The most perceived impacts of agrochemicals on human health were chest pain (69.5%), headache (68.5%), physical weakness (63.0%), eye irritation (75.5%), skin rashes and itching (75.2%) and throat and nose irritation (76.5%).

Table 1: Percentage response on perceived impacts of use of agrochemicals on human health among the farmers

Health symptoms	Yes F (%)	No F (%)	Decision
Chest pain	278(69.5)	122(30.5)	High
Eye Irritation	302(75.5)	98(24.5)	High
Headache	274(68.5)	126(31.5)	High
Skin rashes/itching	301(75.2)	99(24.7)	High
Excessive salivation/ vomiting	247(61.7)	153(38.2)	High
Difficulty in breathing	241(60.2)	159(39.7)	High
Dizziness	236(59.0)	164(41.0)	Moderate
Coughing	221(55.2)	179(44.7)	Moderate
Physical weakness	252(63.0)	148(37.0)	High
Throat and Nose irritation	306(76.5)	94(23.5)	High
Overall %	66.4	33.5	High

Key: 0-19% = very low, 20-39% = low, 40-59% = moderate, 60-79% = high while 80% and above is interpreted as very high, (N=400).

Result in Table 2 shows that high proportions (66.4%) of farmers asserted that agrochemicals impacted negatively on the environment. Pollution of the air (62.5%), contamination of the streams

and rivers (65.0%), damage to the soil fertility (70.0%) and remnants of agrochemicals on food crops (73.5%) were the most perceived agrochemical impacts on the environment.

Table 2: Percentage response on perceived impacts of the use of agrochemicals on environment among farmers

Impacts on environment items	Yes	No	Decision
	f (%)	f (%)	
Agrochemicals pollute the air.	250 (62.5)	150 (37.5)	High
Agrochemicals can contaminate streams and rivers.	260 (65.0)	140 (35.0)	High
Agrochemicals can kill fishes in the streams and rivers.	221(55.2)	179 (44.7)	Moderate
Bystanders and those living close to farm lands can be affected by agrochemicals.	210 (52.5)	190 (47.5)	Moderate
Agrochemicals can damage the soil fertility	280 (70.0)	120 (30.0)	High
Agrochemicals remaining on food crops and livestock are harmful to human health	294 (73.5)	106 (26.5)	High
Overall %	63.1	36.8	High

Key: 0-19% = very low, 20-39% = low, 40-59% = moderate, 60-79% = high while 80% and above is interpreted as very high, (N=400).

Table 3 shows that very high proportions (92.5%, and 84.7%) of farmers with no formal and primary education asserted that agrochemicals impacts negatively on health, while low proportions (35.5% and 28.8%) of farmers with secondary and tertiary levels of education indicated that

agrochemicals impact negatively on human health. Table 3 also shows that there was a significant difference in the perceived impacts of the use of agrochemicals on human health among farmers ($p = .024$).

Table 3: Percentage responses on perceived impacts of use of agrochemicals on human health among farmers and summary of chi-square analysis based on level of education

Health symptoms	Levels of education				χ^2	P value
	No formal (n=130) f (%)	Pri. (n=110) f (%)	Sec. (n=90) f (%)	Ter.(n=70) f (%)		
Chest pain	122(93.8)	98(89.0)	36(40.0)	22(31.4)	9.47	0.024*
Eye Irritation	126(96.9)	104(94.5)	42 (46.6)	30 (42.8)		
Headache	121(93.0)	100 (90.9)	32 (35.5)	21 (30.0)		
Skin rashes/itching	123 (94.6)	103 (93.6)	47 (52.2)	28 (40.0)		
Excessive salivation/	120 (92.3)	92(83.6)	25 (27.7)	10 (14.2)		

vomiting				
Difficulty in breathing	119(91.5)	86 (78.1)	22 (24.4)	14 (20.0)
Dizziness	118 (90.7)	81 (73.6)	23 (25.5)	15 (21.4)
Coughing	108 (83.0)	72 (65.4)	25 (27.7)	16 (22.8)
Physical weakness	122 (93.8)	93 (84.5)	21(23.3)	16 (22.8)
Throat and Nose irritation	125 (96.1)	104 (94.5)	47 (52.2)	30 (42.8)
Overall %	(92.5)	(84.7)	(35.5)	(28.8)

Key: 0-19% -= very low, 20-39% = low, 40-59% = moderate, 60-79% = high while 80% and above is interpreted as very high, (N=400).

Discussion

The finding of the study showed that high proportions (66.4%) of the farmer asserted that use of agrochemicals impacts negatively on human health. This finding indicates that the farmers might be generally knowledgeable about the negative effect of indiscriminate and extensive use of the agrochemicals on farm lands. This also may be due to the non-compliance with the use of personal protective equipment in agrochemical applications among farmers. This is consistent with the findings of previous studies by (Jallow et al., 2017a; Lekei et al., 2014; & Sharafi et al., 2018) that reported impacts of agrochemicals on human health among the respondents. The finding of the study showed that high proportions (75.5%) of the respondents are of the opinion that the use of agrochemicals causes eye irritation. This could be that the farmers mix and apply the agrochemicals without wearing eye glass or google to protect their eyes. This is in line with the findings of Sharafi et al. (2018) which observed that high proportion (80.70%) of the respondents in their study also reported eye irritation as an effect of use of agrochemicals among the farmers.

The result of the study further indicated that high proportion (75.2%)

of the farmers reported skin rashes/itching as impact of agrochemicals on human health. This might be that the farmers do not wear the aprons or overalls meant to protect their body from the adverse effect of agrochemicals. This is in support of the study of Lekei et al. (2014) which indicated that the most prevalent health symptom was skin irritation but in contrast with the findings of Muhibbullah and Sarwar (2017) which observed that very low proportion (13.63%) of the farmers in their study reported skin irritations as an outcome of agrochemicals on human health. The findings of the study also showed high proportion (76.5%) of the farmers reported that throat and nose irritation are among the effects of agrochemicals on human health. This might be that the respondents were not using face masks to prevent inhalation of the chemicals. This is similar to the findings of Sharafi et al. (2018) which observed that high proportion (72.2%) of the participants reported that throat and nose irritation are outcomes of agrochemicals on human health. The similarity may be due to the similarity of the respondents with intention to increase productivity and maximize profit.

The finding of the study also showed that greater percentage (68.5%)

of the participants reported headache as one of the impact of agrochemicals on human health. This could be due to absorption of the chemicals into the nervous system which can cause nervousness and headache. This is in congruence with the study of Miah et al. (2014) which noted that respondents reported that excessive use of chemicals can damage the nervous system of the body and that the toxicity and dust particles as residues of agrochemicals may create headache among the users through inhaling system. The similarity may be due to the fact that all the farmers are interested on how to increase productivity to maximize profit forgetting to protect themselves with personal protective equipment from the adverse effect of the agrochemicals.

The result of the study showed that impact of agrochemicals on environment is enormous. The respondents in the study unanimously asserted that agrochemicals have negative impacts on environment (plants, soil, water, air, fishes, livestock, and others). This could be due to the fact the farmers spray the agrochemicals with the sprayers which can be carried by the wind or rain water to contaminate the environment. This is in support of the findings of the previous studies by Muhibbullah and Sarwar (2018), Sharafi et al. (2018) and Ram et al. (2020) which noted that excessive use of these agrochemicals is creating detrimental effects on plants, soil, water, fish ponds, feeding grasses and overall environment. This may be due to the run-off water carrying the agrochemicals and partly because farmers bath and wash clothes worn during farming activities in the streams and banks of the rivers. Another reason

could be due to extensive and repeated use agrochemicals affecting the soil fertility.

The findings of the study further showed that high proportion (73.5%) of farmers reported that agrochemicals residue on crops and animals are harmful to health. This corroborates with the findings of several studies by (Franklin et al., 2017; Ighayebzadeh et al., 2016; Pasder et al., 2017; Pirsahel et al., 2016; & Sharafi et al., 2018) which observed that high concentration of pesticides on agricultural products are harmful to human health and environment. The food crops with high concentrations of the agrochemicals when consumed repeated for prolonged period can result to more serious health problems such as asthma and skin /throat cancer, blindness and even death.

Result of the study presented the impacts of agrochemicals on human health among farmers based on level of education. Findings of the study showed that there was significant difference in the impacts of agrochemicals on human health based on level of education. This result is not surprising as the educated farmers are more likely to attend training on agrochemicals and tend to observe the producer's instructions to minimize the adverse outcome and ensure safety unlike the uneducated counterparts. This corroborates with the findings of previous studies by Olverira et al. (2012) that stated that educated farmers are more knowledgeable about pesticide safety, have better ability to read, understand pesticide safety, understand and follow hazard warnings on labels and conceptualized the consequences of poor pesticide

usage practices. Shekh et al. (2014) also observed that low level of education could result in using agrochemicals that are not appropriate for a specific service. Gaber and Abdel-Latif (2012) further noted that farmers who received school education had more knowledge about the negative effects of pesticides on health and routes of contaminations with pesticides, and Sharafi et al. (2018) noted that relationship between level of education and pesticide use are statistically significant. Educated farmers had higher tendency to read labels of pesticides containers, follow the instructions in the application of the agrochemicals, wear the personal protective equipment and to take precautions after coming in contact with pesticides.

Conclusion

Agrochemicals are essential in the present day's farming to protect the crops from pests and to increase productivity. However, the agrochemicals impact negatively on human health and environments. The findings of the study concluded that high proportion of the farmers confirmed that agrochemicals impact negatively on human health and environment. Greater impact was reported among the less educated farmers indicating the role of education in adequate safety precautions and proper use of agrochemicals in the production of plants and animals for human consumption.

Recommendations

Based on the findings of the study, the following recommendations were made:

1. Farmers association should periodically organize workshops to share opinions on the benefits of using dosage and type of agrochemicals to reduce exposure to agrochemicals and its adverse effects on health and environment.
2. Agricultural extension workers should make periodic visits to the farmers to inculcate in them the proper use of agrochemicals.
3. Government in collaboration with the ministry of health, agriculture and environment should ensure that farmers adhere to the agrochemical guidelines and principles. Government should also endeavour to organize pesticide training for the farmers.

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Parenting and the Girl-Child: Issues in Adichie's *Purple Hibiscus* and Agbasimalo's *The Forest Dames*

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Abstract

Parenting is an intricate and critical aspect of child rearing. Children are susceptible to danger, and so need to be closely monitored and guided for survival. The girl-child is usually more vulnerable to harm and vagaries of the environment and so requires close guidance. Parenting demands specific efforts to support, protect and promote the physical and emotional wellbeing of the child. Mothers, in particular, learn to form close bonds with their daughters. However, some mothers do not respond or follow up on their girl-child in order to provide the necessary friendship for her proper development.. Incidents portrayed in the texts of Chimamanda Adichie's *Purple Hibiscus* and Adaokere Agbasimalo's *The Forest Dames* reveal issues of mother-child relationship, indicating active and inactive parenting. Scholars have reviewed *Purple Hibiscus* as a cultural, patriarchal, child development or bildungsroman text, whereas *The Forest Dames* has been studied as a war text and as a record of history, among other discourses. Using John Bowlby and Mary Ainsworth's Attachment Theory, which posits a close parent-child relationship as a hallmark of positive parenting, this study examines the pattern of relationship between the mothers and the girl-children in the narratives. The paper specifically examines the dominant roles of the individual mothers, particularly, Beatrice and Ifeoma in *Purple Hibiscus*, and Dora, in *The Forest Dames* in securing the girl-child from impending and real dangerous circumstances around her. The paper advocates positive and authoritative parenting requiring concerted and critical efforts of mothers in determining the safety and future of the girl-child.

Keywords: Parenting, Girl-Child, Vulnerability, Attachment Theory, Authoritative Parenting.

Introduction

Children need all the care possible to help them attain overall positive development. This attainment can be achieved through proper parenting, which according to Breiner et al. (2016) "promotes positive emotional health and well-being and supports their overall mental health, including a positive sense of self as well as the

ability to cope with stressful situations, temper emotional arousal, overcome fears, and accept disappointments and frustrations" The job of parenting is very critical. It is a learned habit needed to safeguard both male and female children, especially the girl-child, bearing in mind that the girl-child is vulnerable and susceptible to abuse and molestation by unscrupulous

individuals. Therefore, she needs the protection and mentorship of the parents, especially the mother, who usually is readily attached to the child as the caregiver. Therefore, "provision of support by parents help minimize the risk of internalizing behaviours, such as those associated with anxiety and depression, which can impair children's adjustment and ability to function well at home, at school, and in the community" Breiner et al. (2016). However, it is taken for granted often that the mother builds friendship and close relationship with the girl-child. Parents, especially mothers, are therefore essential resources for children in managing and guiding their overall positive development into adulthood. Parenting practices ensure children's health and safety, preparing them for life as productive adults. Parenting is a critical task and is more than a biological function. It involves a complex mix of socialization and education of the child, as well as their emotional, social, and mental needs. Failure is readily apparent when some parents, particularly mothers are unable to closely monitor and guide their daughters, predisposing them to abuse and harm.

Narratives in Chimamanda Adichie's *Purple Hibiscus* and AdaOkere Agbasimalo's *The Forest Dames* indicate critical issues of parenting, some of which could be seen as being positive or negative, especially, considering the mother's involvement in the experiences of their girl-child. In *Purple Hibiscus*, Kambili's brutal experiences in the hands of her father, Eugene and the mother, Beatrice's actions and inactions are issues of concern. Onukaogu and Onyerionwu, (2010) observe that "their

father, whom they fondly called Papa, maintains an elevated rank among the strictest of disciplinarians in a world where excellence is the most fundamental and absolute yardstick, where second best is not only unacceptable but also indicates a reason not to live". Kambili suffers heavily under the crudity of her father who expects perfection and absolute adherence to his rules and those of the church.

Agbasimalo's *The Forest Dames* published in 2012 is a novel based on war experiences. The book tells the story of four young girls, Adaeze, Ugonma, Sofuruchi and Lelenwa, called, Deze, Gonma, Sofuru and Lele for short, who are the forest dames. In an interview with Nangwu (2012) AdaOkere discloses that her novel is a true story of her experience written as a novel, and can be termed "a fictionalized non-fiction of her personal experience" stressing that it was not a story told to her or what she read up from a book. She explained that it was about a young girl and her experience during and after the Nigerian-Biafran war, shortly after Nigeria gained independence and the evils perpetrated by the Nigerian soldiers in remote communities. *The Forest Dames* is therefore one of the war novels that fictionalizes the events of the civil war. Though it is relayed as the author's personal experience, but it is a fiction, being an imaginative expose of the Biafran war.

Both texts, *Purple Hibiscus* and *The Forest Dames* explore critical issues of parenting that project mother-child relationship. *The Forest Dames* highlights a war situation that informs the disruption of life for the mother and the

girl-child. In their corroboration, Onwugbufo and Omagu (2016), note of Agbasimalo's novel: "*The Forest Dames* (2012) is a post-colonial literature that retraces the impact of the war on the Igbo woman during the Nigerian civil war". While Adichie's *Purple Hibiscus* relays incidents of child abuse and neglect in the home front, Agbasimalo's narrative indicates that at every stage of the development and at every situation, the girl-child should be given adequate nurturing and protection through conscious parenting. The actions and inactions of the mothers, Beatrice and Deze in the texts speak volumes of the different types of parenting, and the implications of positive and negative parenting.

Chimamanda Ngozi Adichie and AdaOkere Agbasimalo are contemporary writers who have received extensive critical and intellectual attention. Their texts *Purple Hibiscus* and *The Forest Dames* have been discussed majorly as feminist centered texts among other critical discussions. For example, Enyeribe (2020) in "Female Bonding: A Panacea to War Trauma Recreated in Some Nigerian Novels" studies Adichie's *Half of a Yellow Sun* and Agbasimalo's *The Forest Dames* as women centered narratives using a Post-colonial feminist (womanism) consciousness. The paper portrays the traumatic experiences of women during the Nigeria-Biafra war, and how they were able to surmount the challenges and difficulties presented to them by the disruptions of the war. This they achieved through concerted efforts of the women who come together bonded by a common cause to survive the war. Enyeribe states that "the onset of the civil war saw the

disruption of family and communal life and as such gender roles were consequently reversed. For instance, traditionally, men are seen as the heads of households but with the war on, most women had no choice but to take up the role of heads in order to survive the trying period." In relating this turbulent period of the war, Enyeribe "uses trauma and bonding as the analytical category to highlight the argument of women's interactions with war and trauma and their unification along class lines (bonding) in order to support each other and ultimately survive". The idea of bonding is relayed in Agbasimalo's *The Forest Dame* where women are reported to form "relationships that enable them to share information, instruction, knowledge and ideas for survival such as, discovering new markets where wares are sold and resold" In all, women render help to each other in order to ameliorate the traumatic experiences of the war situation.

In a paper, Ikediugwu (2013) portrays Adichie's female characters as subtle in resistance and non-aggressive in dealing with the men folk. She applies "African Feminism" as posited by Carole Boyce who describes African feminism as not antagonist to the menfolk, but that which raises the consciousness of women, challenging them to be aware of certain salient aspects of subjugation against the women. In this essay, the female characters are presented as assertive, firm, independent and at the same time kind-hearted, supportive and generous. In another essay "The Impact of Colonization; A Critical Study of Chimamanda Adichie's *Purple Hibiscus*" by Washaly (2021) seeks to reveal the

impact of colonization on Africa in general and on Nigeria in particular as it explores various effects of colonialism on culture, language and religion. At the same time as criticizing the role of Christian missionaries in obliterating African identity and culture, the article raised concerns of discrimination, white supremacy, linguistic and cultural imperialism. The author noted that certain African countries' policies, as depicted in the story, are influenced by colonial power's dominance and violence. The book exposes the horrible brutality utilized by armed forces to crush the voices that demand for freedom. In doing so, it depicts the tragic episode of Mr Ade Coker, the editor of Eugene's Standard Newspaper, who was tortured and ultimately assassinated by a bomb for his anti-government writings. This military assassination is a re-enactment of a previous assassinations. In the novel, other types of colonization that have been noted include violence produced by strict cultural standards and ideas, such as Eugene's. The character of Eugene, who despises his own tongue, Igbo, and speaks solely in English, reflects a substantial effect of colonization on certain Africans. Only when he is enraged does he speak Igbo throughout the narrative. As a result, he pushes his family to talk entirely in English. Eugene is transformed into an emblem of colonialism characterized by severe brutality.

Critical works on Agbasimalo's *The Forest Dames* includes Onwugbufo and Omagu's (2016), essay, whereby the authors using the cultural position of patriarchy that fuels the fire of female subjugation, concentrate on the image of the downtrodden female gender

whose extreme susceptibility enthrones brazenness and the tenacity to flourish in the face of threats of life and hazardous conflicts. Onwugbufo and Omagu state that "most of the times, patriarchy is either harsh or subtle but in whatever case it is geared towards subjugating the female in order to favour the male". These writers further observe that in *The Forest Dames*, "the soldiers as men and vandals occupy a double position of the oppressor and use this duality to further clamp on the rights of the women. Many of the ladies are forced to indulge in sex though unwillingly. Many are intimidated into it, while a few, willingly gave in for fear of violence or hardship, and are regarded by the people as "Greedy" or "Sabo". Such is the plight of women who experienced the war. It is therefore evident that patriarchy comes with intimidation and violence, while poverty and hardship fuel female subjugation and exploitation. But, despite the persecutions and emotional torture being suffered by the women, they are strengthened in their willpower as they come together to forge ahead. Their resolve is captured in the narrative which mirrors the strangest and most dangerous adventure by the forest dames who would rather take up residence deep in the Mkpoto forest and risk being ripped apart by wild animals, than remain in the community and risk being abducted and raped by vandal soldiers who defiled both unmarried and married women with impunity. The women showed strength in the face of all odds. They proved to be heroines during hostilities who still provided for their families and communities at large. For example, the female gender in

Agbasimalo's *The Forest Dames* showed resilience and doggedness in the ongoing uprising. They therefore, overcame limitations with the tenacity that resulted in self-discovery.

In another paper, Kadiri (2018) made a study of "Lexico-grammatical Analysis of Ada Okere Agbasimalo's *The Forest Dames*" which identifies the prevalent linguistic tools deployed in the novel as style index for plot and theme development. The paper examines the use of lexical categories, Geoffrey Leech and Mick Short's checklist of linguistic and stylistic categories such as nouns, compound nouns, verbs, adjectives, adverbs, registers, collocations, and their different categories. It highlights instances of code-switching of Igbo and Hausa languages. As identified: "for example, in the novel *The Forest Dames*, Hausa words are used in pages 32, 41 and 195 as illustrated, the words *Wake* refers to beans, *garirigo* (cassava flour), *kubewa*". These words are placed alongside English words as mark of creativity and a way of bringing home the themes and ideas in the plot narrative. Similarly, the essay, "Signs and Codes in AdaOkere Agbasimalo's *The Forest Dames*", Joekin et al. (2020) make a linguistic study of codes and signs as guides to the meaning of the text. This is achieved using the fusion of Fredinand De Saussure's theory of signs and Roland Barthes' theory of five codes which are applied in the identification and explanation of linguistic signs used in the narrative for easy understanding of the brutal effects of war on the women and the girls. These signs and codes are carriers of meaning in literary analysis. Some of the codes used in the discourse include:

the proairetic code, called the code of action; the semantic code known as the connotative code; the symbolic code, referred to as the antithetic code, and the cultural code or the referential code. The plot of the text narrates the ugly incidents leading to the war, and the level of massacre and violence during the war.

In spite of the quantum and spread of themes and criticisms on these texts, there are still rooms even for more. This paper sets out, therefore, to explore parenting and the girl-child in the two selected texts. Specifically, the paper interrogates appropriate and inappropriate parenting styles, of parents, mothers in particular, in guarding the girl child from harm and guiding them towards the future through proper parenting. Using parenting as a key word in the framework of analysis, the issues of proper upbringing and protection of the girl child takes paramount attention.

Conceptual/Theoretical Framework

This literary analysis is based on the framework of Attachment Theory, a natural social survival mechanism propagated by John Bowlby and Mary Ainsworth that posits a close parent-child relationship. Attachment is a learned activity and a lasting emotional and psychological bond between people in a relationship, especially, between a child and the care giver. According to this theory, "every child is born with an innate attachment behavioural system that is complementary to a caregiving behavioural system" (Vrticka, 2022). This behavioural biological function is found to enhance chances of survival in times of distress and need. This theory comes into play to explore the

importance of mother- child attachment in situations of neglect, physical, sexual and emotional maltreatment being suffered by the young females in the narratives under study. This can be achieved through effective parenting.

Parenting shapes the lives of children and prepares them for a healthy and prosperous future. Childhood or youth hood is critical and tedious, requiring concerted efforts of parents. Parenting is a multifaceted activity, geared towards safeguarding and nurturing children. More specifically, the girl-child requires close guidance and mentoring as she grows. Naturally, the mother is more responsible for close nurturing. According to Breiner et al (2016) "parents and other caregivers are essential resources for children in managing emotional arousal, coping, and managing behaviours. They serve in this role by providing positive affirmations, conveying love and respect and engendering a sense of security". Parenting, therefore, supports the physical, emotional, social, psychological, and intellectual development of the child.

Attachment theory, which establishes a close parent-child relationship, is important in the area of social and emotional outcomes for children, particularly the work of John Bowlby and Mary Ainsworth. Fundamentally, the purpose of attachment is for a child to feel safe, secure, and protected. The process of attachment usually starts at infancy. Bowlby's Evolutionary Theory of Attachment re-echoed by Natala (2022) suggest that:

Attachment is a deep and enduring emotional bond that connects one person to another across time and

space. Attachment does not have to be reciprocal. Attachment behavior in adults towards the child includes responding sensitively and appropriately to the child's needs. Attachment theory provides an explanation of how the parent-child relationship emerges and influences subsequent development.

The attachment of a child with the mother or caregiver is a natural bond which needs to be sustained for the positive future of the child. Notable parenting styles are identifiable. These are indulgent or permissive, authoritative, authoritarian or uninvolved parenting. They have been categorized according to level of responsiveness, demandingness and psychological control of the child. Parenting therefore is multi-dimensional, and requires that "parents must develop both depth and breadth of knowledge, ranging from being aware of developmental milestones and norms that help in keeping children safe and healthy to understanding the role of professionals e.g. educators, childcare workers, healthcare providers, social workers" Breiner (2016). It is imperative for parents to respond to the varied needs of the child. Darling (1999) posits that "both parental responsiveness and parental demandingness are important components of good parenting. Authoritative parenting, which balances clear, high parental demands with emotional responsiveness and recognition of child autonomy, is one of the most consistent family predictors of competence from early childhood through adolescence" What happens between parents and children matter a lot. As a complex activity, the parenting style given to a child helps to

shape the life of the child and to prepare them for a happy and successful tomorrow.

Parenting in Adichie's and Agbasimalo's Texts

Parents, particularly mothers stay close to the children and follow up with their activities. However, not all mothers have demonstrated the capacity to take up that duty of looking after their daughters. It requires active parenting through painstaking mode of guidance to impart positively and protect the girl child, especially in a tensed situation. The setting in Agbasimalo's text depicted a war situation filled with harassment and molestations of the female gender. Agbasimalo revealed that "*The Forest Dame* is a true life account of what happened during the Nigeria-Biafra war of 1967-1970. While war raged at the battle ground, a lot transpired at the home front", (Nwangwu, 2012). Soldiers fighting for the Nigerian side were busy ravaging the females and young girls in the villages in the guise of war. "Their favourite past time was to hunt for and abduct young females or older ones in the absence of young ladies or mere girls, in the absence of either. They had no respect for females found within the invaded areas. They would not kill them. They would rather abduct and violate them" (Agbasimalo, 2012). The vandals' nefarious activities put the female gender in great jeopardy, leaving the mothers finding critical solution to safeguarding their girls. In *The Forest Dames* "the soldiers sometimes waylaid the women returning from the distant market and dispossessed them of their goods. Every woman who passed by that way had to part with some of the

items she was carrying". In particular, the fate of four young girls who are targets of the Hausa soldiers comes to the fore in the narrative. Enyeribe (2020) writes that the four teenage girls: Lele, Sofuru, Gonma and Deze, "go through horrendous and harzardous adventures in the *Mkporo* forest, strongly aided by their mothers: Phoebe, Liliana, and Dorati. The maidens made a temporary home in the deep forest with the ever abiding risk of beholding spirits and being devoured by dangerous animals". It is in the ensuing challenges that these mothers find it necessary to support the girls with appropriate skills and discipline to escape the ravaging tactics of the soldiers in order to survive sexual molestation, rape or total abduction. It is recorded that "The soldiers usually went into the communities in a lorry as from ten in the morning and roamed about until evening looking for females to prey on, dispossessing traders of farm produce and chatting with some mature male acquaintances, some of whom disclosed the girls' hide outs" (Agbasimalo, 2012). This is the scenario in the war thorn village with women and girls as victims of raids by the vandals.

The girl Deze who is in her early teens becomes a constant target of the soldiers. This situation frightens Dora who tutors Deze on the need to stay indoors to keep out of sight of the vandals. The situation becomes very harassing as the vandals visit homes to search and take away young girls. Deze, a beautiful girl becomes a regular target. In one instance, Deze escaped Sule, a Hausa soldier with ugly tribal marks who swooped on her but was unfortunate as Deze slipped back into the house and "made straight for the

small wooden window, which was ajar. Pushing it open, she dropped into the back compound from where she escaped into the surrounding yam and cassava farmland” (Agbasimalo 2012). The ugly event of the war has made Deze to have her abode in the bush around her compound. She usually stays in the bush during the day and enters the house as night comes, so as to avoid being taken away by the enemy soldiers. With this defense strategy, “moving into the bush in the morning and returning to the house in the evening long after sunset had become a lifestyle” (Agbasimalo, 2012). This includes other incidences of invasion and swooping on the girl’s father’s house for her capture, but for her smartness and that of her mother, Dora. One day, the soldiers drive to her father’s compound in a Land rover heading purposely to their house. Being smart, Deze who had heard the sound of the vehicle and suspected that it must be the soldiers “spontaneously sprinted from the room, through the link door to the back room and then jumped over the short wall. She ran through the compound, flitting past all the other houses until she found herself once more in the bush at her usual hideout, panting” (Agbasimalo, 2012). In order to protect her daughter from constant harassment and possible capture, Dora “decided to do something decisive about her daughter’s safety” (Agbasimalo, 2012). Dora takes a bold and conscious step to ensure the security of her daughter from the ravaging hands of the soldiers. She aligns herself with an older woman, senior Phoebe.

Phoebe is a friend and mentor to Dora. Both women have taken decisive

efforts to protect their girls by sending them to the *Mkporo* forest. Phoebe tells Dora about the forest where she sent her daughter Lelenwa in spite of the dangers of the forest. “The women decide to keep their children away from vandals. Dora who is alarmed initially about the evil spirits and thought of wild animals in the forest decided to join forces with Phoebe and keep Deze with other girls” (Agbasimalo, 2012). These women demonstrate positive parenting, going extra miles and taking the risk to safeguard their children. By taking their children to the *Mkporo* forest secretly, these women are undertaken to take their fate in their own hands. They embark on nocturnal visits so as to seal their ordeal, taking all the risks, even without light, all in the efforts to keep their children safe from beasts, called Nigerian soldiers. According to Onwugbufor and Amagu (2016) “Efforts by the mothers to alleviate the adverse impact of the forest habitation are numerous, including constant visit with water and other provisions, a well-erected shackles, supply of books to Deze who is already in the secondary school before the outbreak of the war and loves reading and also share laughter with the stranded maidens”. For the sake of the girls, the business of *Mkporo* forest becomes a secret knowledge only to the concerned women.

As Deze joins Lele, Gonma and Sofuru, the four forest Dames, she feels grateful to her mother, “Deze heaved a sigh of relief and was indeed grateful to her mother for moving her further away from the indecent soldiers, even though she was now exposed and closer to the ravenous inhabitants of the forest” (Agbasimalo, 2012). The conscious

efforts of the girls, especially Deze in imbibing the discipline and motivation of their mothers helped them greatly in guiding their future. Particularly, the relationship between Deze and her mother Dora saved them a lot from being prey for the soldiers. The mother and child outsmarted the soldiers who confessed that “Deze was smart and was capable of escaping at the slightest sign of danger ... Thanks to her wise mother” (Agbasimalo, 2012). Active and positive parenting needs conscious effort and wisdom from mothers to positively and successfully nurture their girl-child and keep them out of harm’s way. The text’s narratives indicate that Agbasimalo’s female parents Dora and Phoebe, imbibed positive parenting and conscious strategies in nurturing their girl-child. And so the girls come through the ordeal strong and confident.

The scenario of active, concerted and close parenting exhibited by Dora, and Phoebe in Agbasimalo’s *The Forest Dames*, unfortunately is not felt in Adichie’s *Purple Hibiscus*, between Beatrice and her girl-child, Kambili. Major incident in the narrative is domestic violence, whereby Eugene constantly physically abuses his wife Beatrice and daughter, Kambili, and other members of his household. Kambili suffers domestic abuse coming from her father, Eugene, a situation which according to Oshindoro (2019) may be due to the parenting type of Eugene and Beatrice. He states that “a major factor in the enduring regime of abuse in the Achike family is that Papa, Mama and their children are distant, from their extended families. Representing Eugene as a pariah, with his isolationist style of parenting.”

Beatrice’s style of parenting tends more to the uninvolved or neglected parenting, characterized by inaction and silence. Beatrice is a character “who silently accepts domestic violence because she has internalized the secondary status and suppression of women. She is a mother of two children Kambili and Jaja, and Mama puts up with all the physical and emotional abuse perpetrated by her husband Eugene who often gives his violence a religious justification” (Aswin & Antony, 2019). Beatrice does not respond to the issues concerning her children, especially, her girl-child, Kambili. She stays mute and watches her daughter Kambili being molested. She offers no support and guidance for Kambili. She watches Eugene scold Kambili and Jaja even for merely holding Papa Nnukwu’s picture. The spate of physical violence meted out on Kambili by Eugene is unprecedented, unfortunately, Beatrice does not show capacity in supporting Kambili. Owing to her inactions and unresponsiveness to her plight “Kambili has become disappointed with her father and with great effort she resents her mother for failing on protecting her from her father’s attack and for making excuses for his actions” (Astrick, 2018). The situation clearly shows Beatrice as a negligent mother whose permissiveness predisposes her daughter to harm and molestation.

However, unlike Beatrice, Ifeoma, Beatrice’s sister-in-law tries to bond with Beatrice in safeguarding her children from the violent clutches of Eugene, but Beatrice remains docile. She sees her ideas as unconventional and so cannot save Kambili from her father’s brutality. This is because “she never has

the confidence and assertiveness of Aunt Ifeoma because Mama has always been economically dependent on her husband. She accepts the position of being the other thrust upon her by patriarchy" (Aswin and Antony, 2019). Ifeoma's style of parenting is involving as those of Dora and Phoebe in Agbasimalo's text. She nurtures a thriving relationship between herself and girl-child Amaka. She is projected as one of Adichie's strong women and one whose parenting style is positive. Onukaogu and Onyerionwu (2010) affirm that "she encourages Obiora his son to participate in the *ima mmuo* initiation rites, even as she prompts Amaka to embark on the baptism and confirmation rites of the Catholic church...". Ifeoma's activeness is acknowledged by Oshindoro (2019) who writes that "rather than purely a result of formal education, Ifeoma's wisdom and idiosyncrasies show a mix of both formal and native intelligence, with the latter most highly valued in the novel. We see her demonstrate her native intelligence" Ifeoma is bold, hardworking, strong, assertive, and economically independent.

Conclusion

The analysis of the two books showed that the women, Dora and Phoebe in Agbasimalo's *The Forest Dames* and Beatrice and Ifeoma in Adichie's *Purple Hibiscus*, have demonstrated various capabilities, both positive and negative to reach beyond themselves to nurture and protect the girl-child who is vulnerable and susceptible to harm and danger both in the home and in the larger society. Parenting comes under a huge challenge in providing effective cover and guide for the girl-child. This

can be overcome by positive parenting, a parenting which makes huge demands from mother as the primary care-giver, confidant and close friend to the girl-child. It is imperative for parents, particularly the mother to establish a close-child relationship with secure attachment. Mothers inevitably should encourage and support the girl-child to think and act and more importantly to respond to their individual needs. Mothers must first equip themselves by being financially independent, assertive and firm in decision and action so as to build strong mother-child relationship and provide the needed support. Positive parenting should equally demand responsibilities from the child and offer prompt responsiveness to the needs of the child through close monitoring and friendship, as manifest by Dora and Phoebe in Agbasimalo's text. This active mother involvement in the affairs of their girl-child, sharply contrasts with Adichie's Beatrice's who obviously remains detached from the plight of her girl, Kambili. Attachment between mother and girl-child helps the girl-child navigate through domestic and societal abuses, and ushers her into a protected and confident future.

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Breakfast Meal Skipping Practices of Undergraduate Students of University of Nigeria, Nsukka

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Abstract

The study examined breakfast meal skipping practices of undergraduate students of University of Nigeria, Nsukka. Specifically, the study ascertained the rate of skipping breakfast meals by the students, their causes and strategies for improving the meal consumption practices among them. The study used descriptive survey research design. Population for the study was 3,550 students from two Faculties of Education in the university. Two hundred randomly selected students formed the study sample. A forty-two item questionnaire was used to generate data for the study. Data were analyzed using percentage and mean with decision benchmarks at 50% and 2.50 scores respectively. Results showed that many students (52%) skipped breakfast meals seven times in a week. Reasons for skipping breakfast meals were: lack of time (\bar{x} =3.42), food spoilage (\bar{x} =3.33) and early morning lectures (\bar{x} 3.28) among others. Fourteen strategies were identified in improving students' breakfast meal consumption practices. They included: encouraging students to take up paid part-time jobs to financially support themselves (\bar{x} 3.89), providing students with enough up keep money (\bar{x} 3.54); equipping the students with skills of food budgeting (\bar{x} =3.16) and adhering to their food budget (\bar{x} =3.21). Others included regular supply of electricity to students' hostel (\bar{x} 3.25) and provision of cafeteria in each of the students' hostel (\bar{x} =3.02). It was recommended that very early morning and impromptu lectures should be stopped among others. Further research will be needed to examine student's socio-demographic variables in relation to their breakfast meal skipping practices and academic performance.

Keywords: Undergraduates, Food, Breakfast, Meals, Skipping,

Introduction

Food is a life necessity which can be in solid or liquid form. Food when eaten and digested provides the body with nutrients for; growth, repair and regulation of body processes. Anyakoha (2015) posits that food substances are categorized as; water, carbohydrate, protein, fats and oils, minerals and

vitamins. The author further explains that when foods are eaten and assimilated by the body they become sources of energy and antibodies that protect the body from disease causing infections and ill-heaths. Foods are often prepared and served as meals at different time periods as breakfast, lunch, supper or dinner in a day.

Breakfast meals are eaten in the morning while lunch and supper otherwise called dinner meals are eaten in middays and in the evenings respectively.

Breakfast is the first and most important meal of the day. It is consumed to break the long fast after long night sleep (Badrasawi et al., 2021). The authors maintain that breakfast should be consumed within 2 to 3 hours of waking up and before 10 a.m. Consumption of breakfast meals plays an important role in meeting the people's daily macro and micro nutrients requirements (Murphy, 2017) including that of undergraduate students. As the most important meal of the day, Mohiuddin (2019) posits that the breakfast meal decks 20% to 35% of peoples' daily energy needs. Earlier, Nicklas (2004), explains that for most people breakfast meal supplies one quarter of their essential micronutrients such as iron, folic acid, zinc, calcium, vitamins A and B. The nutrients according to Mohiuddin (2019) are needed in kick starting daily body metabolism especially among undergraduate students whose rapid physiological changes, active lifestyle and academic pursuit demand adequate consumption of three square meals to stay healthy and concentrate in their studies.

Undergraduate students are people pursuing a first degree course of study in the university after secondary school level education. According to Ibeanu et al. (2012) they are people between 19 to 30 years of age and by implication are young active adults, who are in need of large quantities of quality meals (Nzeagwu & Akagu, 2011). This is to say that undergraduate students should

have a healthy eating habit that is devoid of skipping meals in order to stay healthy and succeed in their academic pursuits. Unfortunately, early adulthood which most of the undergraduate students find themselves in is the stage of freedom from parental control with associated challenges that could include skipping meals.

Skipping meals means missing or not eating all the three meals of breakfast, lunch and dinner, or any two or one of them in a day. Skipping meals is a normalcy for most young adults according to Nzeagwu and Akagu (2011). Supporting this view, Mohiuddin (2019) states that skipping meals is highest among the transitory young adults while Sakamaki et al. (2005) reported that breakfast meal is the most frequently skipped when compared with lunch and supper meals. Under researched however, is the breakfast meal skipping practices of undergraduate students of University of Nigeria, Nsukka which informed this research with a view to improving their breakfast meal consumption for healthiness.

Adequate breakfast meal consumption is an aspect of healthy lifestyle and may be associated with positive developmental outcomes including healthy lifestyle among pupils and students in schools. Such positive outcomes according to Adolphus et al. (2019) include; better school attendance and performance, improved social and mental activities, good physical fitness and healthier weight among others. In addition, Adolphus et al. (2013) found a significant relationship between frequency of breakfast consumption and academic performance and better

test scores among pupils and students that eat breakfasts than those that skipped the meal. Benefits inherent in consumption of breakfast meals underline efforts that target breakfast meal consumption by students which invariably would eliminate causes of skipping the meal among others.

Reasons for skipping breakfast meals could be as varied as individual students' socio-demographic variables, lifestyle and food habits. Feye et al. (2021) reported that some students skip meals due to lack of time, appetite, and inability to cook, while Eldisoky (2003) and Danquah et al. (2010) had earlier noted that fasting in the context of religious observances and not being hungry, weight reduction measure, late supper consumption and laziness as reasons for skipping breakfast meals.

Skipping breakfast meals has been associated with students' unhealthy conditions and poor school learning outcomes. Accordingly, Murphy (2017) found that habitual students' breakfast meal skippers were two thirds deficient in their recommended dietary allowance (RDA), including being less physiologically, socially and mentally ready for serious academic studies. Rampersaud, (2005) equally noted poor academic performance and subsequent lack of employable skills among undergraduate breakfast meal skippers.

The ever growing population of unskilled and unemployable graduates from Nigerian universities is a common knowledge (Olukanni et al., 2014) and is not unconnected with rising wave of insecurity evident in high rate of; prostitution, armed robbery, internet fraud and kidnapping which Aderoju, et al. (2017) stated are challenging Nigeria today. Dealing with the hydra

headed problems beckons for empirical evidence that informed this research work given dearth of information on breakfast meal skipping practices of students of University of Nigeria for policy decisions.

In this circumstance, a strategy that will metamorphose into more undergraduate students of the university improving their breakfast meal consumption would contribute in the production of more knowledgeable and skilled university graduates, who subsequently would contribute effectively to national growth. This was the bottom line outcome sought to be achieved through contributions of this research work.

Purpose of the study

The general purpose of the study was to investigate breakfast meal skipping practices of undergraduate students of University of Nigeria, Nsukka. Specifically, the study investigated;

1. the rate of skipping breakfast meals in a week among undergraduate students of University of Nigeria, Nsukka;
2. reasons for skipping breakfast meals among the undergraduate students and
3. strategies for improving breakfast meals consumption among the undergraduate students.

Methodology

Design of the Study: The study adopted descriptive survey research design.

Area of study: The Study was carried out in University of Nigeria, Nsukka. Universities are for training of high level manpower throughout the world. University of Nigeria Nsukka (UNN) is among the first generation Federal

Universities in Nigeria. The university took off in 1960 at the end of the colonial era. The university operates 102 academic departments across 17 faculties that offer 82 undergraduate programmes and 211 postgraduate programmes for a total student population of over 36,000. The university has four campuses: Nsukka, Enugu campus (UNEC); University of Nigeria Teaching Hospital (UNTH) in Ituku-Ozalla, and University of Nigeria Aba campus (UNAC).

Population of the study: The population of the study comprised all the 3,550 registered undergraduate students in Faculties of Education (3,000) and Vocational and Technical Education (550) of the University in 2021. The Nsukka campus houses eleven faculties that include Faculties of Education and Vocational Technical Education. The university's total undergraduate population was twenty-seven thousand and nine hundred and seventeen students (27,917) as at 2021 of which twelve thousand, five hundred and ninety-three were males (12,593) while fifteen thousand three hundred and twenty-four (15,324) were female students. Faculties of Education and Vocational and Technical Educations are producers of educators who facilitate teaching and learning at secondary level of education, Colleges of Education, Faculties of Education and Vocational and Technical Educations at tertiary level of education. As educators they make fundamental contributions in the motivation of learning processes as well as form bridges between individual students, their families and society at large. This explains why student educators from the two faculties were used for the study.

Sample: A proportionate sampling technique was used in selection of the study sample. Out of the total number of 3,000 in the Faculty of Education and 550 from Faculty of Vocational and Technical Educations, a proportionate sample of 5.6% of each was randomly selected out of which gave 31 and 169 respectively that constituted the study sample.

Instrument for Data Collection: A structured forty-two items (42) questionnaire was used for data collection. The questionnaire consisted of three sections made up of 7, 21 and 14 item questions that answered research questions 1 to 3 respectively. A four-point rating scale of; Strongly agreed (SA), Agreed (A), Disagreed (D), Strongly Disagreed (SD) with values of 4,3,2,1 provided responses in each of the sections.

Validation and reliability test of the instrument: The questionnaire was face validated by three experts from the Department of Home Economics and Hospitality Management Education in University of Nigeria, Nsukka. The experts' corrections were reflected in the development of the final copy used for the study. The questionnaire was administered to twenty five students who were not part of the study. The students were randomly selected from University of Nigeria, Nsukka. The internal consistency reliability of the instrument was determined using Cronbach Alpha procedure which recorded the alpha coefficient of 0.85, indicating high internal consistency of the questionnaire items.

Ethical Approval and informed consent: The academic boards of both Faculties of Education and Vocational and Technical Educations approved of the

study after review. A written informed consent was obtained from all the respondents before the data collection. All students were informed that their participation was not compulsory and that the data would be used only for research purposes.

Method of data collection: An invitation letter was given to each respondent. Two hundred copies of the questionnaire were distributed by hand to individual respondents and all were retrieved back after their completion. They were given sufficient time to read the questionnaire before responding to it. The 200 completed copies of the questionnaire were collected immediately after they were filled giving a 100% return.

Data Analysis and Statistical Analysis: Data were analyzed with Statistical Package of Social Sciences (SPSS)

version 20, using frequencies, percentages, means and standard deviations. The benchmarks for decision were 50 % and 2.50 mean scores. Percentage and mean scores of items ≥ 50 and ≥ 2.50 were accepted as 'agreed' respectively while percentage and mean scores < 50 and 2.50 were taken as 'rejected respectively.'

Results

Table 1 shows frequency and percentage responses of the respondents on the rate at which they skip their breakfast meals in a week. The result indicates that more than half (52%) of the undergraduate students skipped their breakfast meals seven times in a week. Ten percent skipped once a week, and 8.5% skipped twice and thrice a week.

Table 1: Frequency and percentage responses on skipping breakfast meal practices by the respondents

How often do you skip breakfast?	Frequency	Percentage (%)
Not at all	0	0
Once in a week	20	10
Twice in a week	17	8.5
Thrice in a week	17	8.5
Four times in a week	16	8
Five times in a week	12	6
Six times in a week	14	7
Seven times in a week	104	52
Total	200	100

In Table 2, the data show the mean and standard deviation responses of undergraduate students on reasons for skipping their breakfast meals. The implication is that skipping of breakfast meals by students are as a result of: time constraints ($\bar{x} = 3.42$), spoilt meals ($\bar{x} = 3.33$) early morning lectures ($\bar{x} = 3.28$)

and impromptu early morning lectures ($\bar{x} = 3.15$) that holds before 8.a.m., expensive private cafeteria meal services ($\bar{x} = 3.22$) which are not within easy reach ($\bar{x} = 2.54$), unavailability of wished breakfast meals in food vendors' offers ($\bar{x} = 2.95$), observance of religious practices ($\bar{x} = 2.68$), insufficient

pocket money (\bar{x} =2.53) which often is delayed in accessing (\bar{x} =2.55), lack of cooking fuels (\bar{x} =2.65), acquired family food habit (\bar{x} =2.64) and lack of planning breakfast meals in advance (\bar{x} =2.66) – all with a grand mean of 2.89 and standard deviation 1.04. Others are not reasons for skipping breakfast meal by the students.

Table 2: Mean and standard deviation responses on reasons for skipping breakfast meals among the respondents.

Reasons for Skipping Breakfast Meals include;	Mean	Standard Deviation	Remarks
Lack of time to prepare the meal	3.42	0.70	Strongly Agreed
Spoilage of planned breakfast meal.	3.33	1.08	Strongly Agreed
Having early morning lectures before 8 a.m.	3.28	0.98	Strongly Agreed
Expensive private cafeterias service	3.22	0.90	Strongly Agreed
Impromptu early morning lectures	3.15	0.80	Strongly Agreed
Unavailability of wished meals in food vendors' offers	2.95	0.90	Strongly Agreed
Observance of religious practices (e. g. fasting).	2.68	1.10	Agreed
Lack of cooking fuel (e. g. electricity, gas, kerosene)	2.65	1.06	Agreed
Exhibition of acquired family food habit	2.64	1.10	Agreed
Not within easy reach of cafeteria	2.54	0.97	Agreed
Insufficient pocket money.	2.53	1.01	Agreed
Delay in accessing my pocket money	2.55	1.85	Agreed
Not planning breakfast meals in advance	2.66	1.11	Agreed
Grand Mean of Accepted Reasons	2.89	1.04	Agreed
Sickness.	2.47	1.09	Disagreed
Having late night meal	2.41	1.01	Disagreed
Lack of appetite.	2.40	1.03	Disagreed
Laziness to cook	2.34	1.01	Disagreed
Laziness to wash up utensils.	2.33	1.12	Disagreed
Desire to lose weight	2.33	1.10	Disagreed
Forfeiting my breakfast meals for others	2.06	1.06	Disagreed
Food vendors not being available for my breakfast meal	1.67	0.89	Strongly Disagreed
Grand Mean of Not Accepted Reasons	2.25	1.04	Disagreed

Table 3 shows the mean and standard deviation responses of undergraduate students on strategies for improving their breakfast meal consumption practices in University of Nigeria, Nsukka. All the 14 items have mean ratings above 2.50 meaning that they are all strategies which when adopted can improve undergraduate students' breakfast meal consumption practices. What it translates to is that the students should; have food budget (\bar{x} = 3.16), which should be followed judiciously (\bar{x} = 3.21), return to university with food stuff from their homes (\bar{x} = 3.06), and plan meal ahead (\bar{x} = 3.31), develop self-menu that contains different classes of food (\bar{x} = 3.10), and eat adequate diet (\bar{x} = 3.20). Again, the table shows that relevant authorities should ensure that; the university's academic time plan is devoid of very early morning lectures

that starts before 8 a.m. ($\bar{x} = 3.26$), supply of electricity in students' hostels is regular ($\bar{x} = 3.25$), subsidized quality meals are provided in university's refectories ($\bar{x} = 4.00$) and that Nigerian dishes are also served in such refectories at meal times ($\bar{x} = 3.02$), cafeterias are located within easy reach of students ($\bar{x} = 3.76$), each hostel is provided with cafeteria ($\bar{x} = 3.02$).

Finally that parents should provide their wards with adequate pocket money ($\bar{x} = 3.04$), while students should be oriented towards engaging in part-time jobs in financially supporting themselves ($\bar{x} = 3.89$). The grand mean and standard deviation of all the accepted strategies is 3.14 and 0.89 respectively.

Table 3: Mean and standard deviation responses on strategies for improving breakfast meal consumption practices of the respondents

Ways of improving students' breakfast meal consumption practices include that;	Mean	Standard Deviation	Remarks
students should be Oriented towards engagement in part-time jobs in financially complimenting their supports	3.89	0.88	Strongly Agreed
Students should have personal planned food for feeding.	3.16	0.95	Agreed
Students should adhere to their planned food budget	3.21	0.93	Agreed
Students should return to the university with food stuff from home.	3.06	0.93	Agreed
Students should avoid eating monotonous breakfast meals	3.31	0.82	Agreed
Students should develop self-menu that contains all the classes of food.	3.10	0.87	Agreed
Students should be given orientation on ways and means of achieving adequate nutrition in university	3.20	0.64	Agreed
University academic time should be devoid of morning lectures earlier than 8a.m	3.26	.091	Agreed
Relevant authorities should ensure constant electricity supply in students' hostels.	3.25	0.98	Agreed
The university in collaboration with relevant authorities should provide refectories with subsidized quality foods	4.00	0.00	Strongly Agreed
Cafeterias should be located within easy reach of students	3.76	.821	Strongly Agreed
Each hostel should have cafeteria service facility	3.02	0.79	Agreed
Parents should provide adequate money for feeding.	3.54	0.60	Agreed
University refectories where they exist should serve Nigerian main dishes to interested students at meal times	3.02	0.79	Agreed
Grand mean	3.14	0.89	Agreed

Discussion

This study focused on breakfast meal skipping practices and reasons including strategies for reducing the practices among undergraduate students of University of Nigeria, Nsukka. Results indicated that all the respondents skipped breakfast meal at least once a week, with more than half of them skipping breakfast meals daily. The findings are consistent with previous works of Sakamaki et al. (2005) and Feye, et al. (2021) who respectively found 24% to 87% and 41% prevalence of skipping breakfast meals among different populations they studied. Collaborating further, Timlin & Pereira (2010) and Adolphus, et al. (2019) noted progressive increase in skipping of breakfast meals from late childhood to early adulthood which they equally attributed to busy time schedules. Breakfast meal skippers according to Badrasawi, et al. (2021) are more likely to eat high fat and cholesterol snacks than breakfast consumers. Hence, Ugwu & Ngwoke (2011) posited that most young people have poor eating habits which could ripple later in life to poor health (Afolabi, et al., 2013; Ukegbu, et al., 2015). The need to ensure students' healthy eating lifestyle by dealing with obstacles that cause them to skip breakfast meals cannot be over emphasized

Reasons for skipping breakfast meals by the students' were as results of; time constraints, spoilt meal, early morning and impromptu morning lectures that held before 8 a.m., inaccessibility to breakfast meals of choice, and expensive private sector cafeteria meal service, observance of religious practices, insufficient and delayed access to pocket money, lack of

cooking fuels, established family food habits, and poor food planning and budgeting. Consistent with these findings were the works of Badrasawi et al. (2021), Feye et al. (2021) and Mohiuddin (2019). The authors noted that lack of time and cooking skills and unavailability of desired meals as well as religious practices were reasons for skipping breakfast. Lack of money (i.e. poverty) was not found as one of the reasons, in this study. The reason could be due to better economies in the developed countries where their studies were carried out relative to Nigeria's still developing economy that has most of her populace living in poverty according to Kazeem (2018). The practice of early morning lectures before 8 a.m. and expensive private cafeteria meal service in the university as found by the study could be attributed to poor management of federal universities in Nigeria as reported by Faboyede, et al. (2017). Accordingly, Ibeanu et al. (2012) had earlier stated that students of University of Nigeria, Nsukka are subjected to stressful academic programmes in addition to the university authority not having and managing any cafeteria services for proper feeding of the students. The implication is that the university does not shoulder the responsibility of providing nutritionally healthy meals to the students. This could result in most of the students wasting the time they should use for their studies in cooking their foods which could be the case in other Nigerian Federal Universities. This is because Aderoju, et al. (2017) noted that most students of University of Ibadan cook their own foods. Thus, explaining finding that students face the problem of lack of cooking fuels as one

of their reasons for skipping breakfast meals found in this study. Nevertheless, the study also found that skipping breakfast meals by the students were not caused by sickness, eating late night meals, lack of appetite, laziness to cook and wash up utensils, the desire to lose weight, and forfeiture of the meal. These findings appear to contradict the findings of studies carried out in developed countries as observed by Feye et al. (2021) and Mohiuddin (2019).

Strategies to be adopted in improving breakfast meal consumption practices of undergraduate students in this study indicated that the students should; return to university with food stuff from their homes, have a food budget and judiciously adhere to it including having a food plan. Supporting the findings, Aderoju et al. (2017) noted that most students from poor homes did not return to universities with food stuffs from their homes despite their meager pocket money not decking the N450 (US\$2.89) daily cost of meals in cafeterias at University of Ibadan. The authors advocated for affordable good quality food services in university cafeterias in promoting students' welfare needed for their effective learning and research works. Findings of the study equally indicated that relevant authorities should ensure that; the university's academic plan is devoid of any early morning lectures that start before 8a.m., electricity supply is regular in students' hostels, refectories with subsidized balanced meals are provided to students as well as cafeterias being located within their easy reach and where possible in every hostel which again agreed with the position of Aderoju, et al. (2017). In addition,

parents should provide enough pocket money to their children in the university with all stakeholders re-orientation of the students towards engagement in paid part-time jobs in financially supporting themselves instead of totally depending on their parents for financial support as noted by the authors. In all, the findings indicated that all hands should be on deck, with the recommendation of Faboyede et al. (2017) collaborating in promotion of undergraduate students' welfare, of which breakfast meal provisioning is a major sub-set. Doing so, would to a large extent guarantee production of healthy and more knowledgeable university graduates who invariably will contribute to national growth and development.

Conclusion

The study focused on breakfast meal skipping practices among undergraduate students of University of Nigeria Nsukka and found that the majority of them skipped their breakfast meals on daily basis. Reasons for skipping the meal ranges from lack of time, spoilage of preserved foods, early morning lectures, lack of cooking fuels to observance of religious rites. Strategies for improving students' breakfast meal consumption practice included different roles to be played by all the stakeholders such as the university, parents and the students themselves. The roles cut across adequate facility, material provisions and managerial functions by the university and parents. Students-related strategies include the need to engage in paid part-time jobs to support themselves financially, and also be

intentional about taking breakfast meals.

Recommendations - The study made the following recommendations:

1. Undergraduate students should avail themselves training on time management, food planning and budgeting including engagement in paid part time jobs in financially supporting themselves.
2. Parents of undergraduate student should ensure that adequate food stuff and pocket money are provided to their children
3. Undergraduate students should be re-oriented towards engagement in decent part time jobs in supporting themselves financially
4. The university authority should provide refectories where subsidized balanced meals should be served and ensure that cost effective cafeteria services are within easy reach of students.
5. Regular electricity should be made available in each student hostel
6. The university authority should include time and food management in the students' orientation
7. General study courses for the students should highlight part-time job opportunities for students.
8. Further research on undergraduate students' socio- demographic variables and skipping meals in relation to academic performance is required.

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Effects of Two Drying Methods – Sun Drying and Shade Drying – on the Nutrient Composition of *Afzelia africana*, *Cajanus cajan* and *Abelmoschus esculentus* Leaves

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Abstract

This study examined the effect of two drying methods – sun drying and shade drying – on the nutrient content of *Afzelia africana* (Akparata), *Cajanus cajan* (Fio-fio) and *Abelmoschus esculentus* (Okra) leaves. The samples were divided into three portions. One portion was analyzed fresh; the second was sundried while the third was shade dried. The samples were analyzed for their proximate, vitamin and mineral contents. Data obtained were analyzed using IBM SPSS version 23. Descriptive (mean and standard deviation) statistics was used to describe the data. The result showed that shade dried fio-fio leaves had the highest protein (29.76 ± 0.02), ash (5.98 ± 0.01) and fibre (2.60 ± 0.01) with the least moisture content (12.63 ± 0.02). Sundried akparata leaves had the highest fat (27.45 ± 0.02) while shade dried akparata leaves had the highest carbohydrate (58.01 ± 0.02), Vitamin C (85.34 ± 0.02 mg), Vitamin A (3314 ± 0.01 IU). Shade dried okra leaves had the highest Iron (125.28 ± 0.02 mg). Fresh okra and fresh fio-fio leaves had the highest zinc (51.08 ± 0.01 mg) each, respectively. The study concludes that fio-fio, okra and akparata leaves contain considerable amounts of nutrients like protein, fiber, Iron and Zinc. Therefore, increase in the consumption of these leafy vegetables will help to supplement diets and alleviate the problems associated with malnutrition in the country.

Keywords: *Afzelia africana*, *Cajanus cajan*, *Abelmoschus esculentus*, sun drying, shade drying, nutrient composition

Introduction

Leguminous plants are more often than not being used as potential solution to low protein diet in most populated regions of the world (Stagnari et al., 2017). This is because most developed and developing countries do not produce sufficient amount to feed its populace, thus, the prices of imported foods are increased, leading to high rate

of food scarcity and malnutrition. Some of these countries have insufficient food supply, especially protein, and they depend on carbohydrates for their daily requirement, which in turn causes incidences of non-communicable diseases such as hypertension, diabetes and obesity (WHO, 2016). Africa has diverse sources of seed bearing tree plants whose leaves are usually

underutilized. Some of these plants are found in the semi-arid, sub-Saharan and tropical zones of Africa and they include *Afzelia africana*, *Cajanus cajan* and *Abelmoschus esculentus* (Igbabul et al., 2014; Omokpariola et al., 2021).

Afzelia africana also known as counter wood tree or African oak is a deciduous tree belonging to the family Fabaceae and sub-family Caesalpiniaceae. It is widely distributed by many African countries including Senegal, Sudan, Uganda, Tanzania, Sierra-Leone, Ghana and Nigeria (Ogbimi et al., 2020). It is called 'yiasé' among the Tivs, 'akparata' among the Igbos and 'apa', 'ukpo' and 'kawa' among the Yorubas, Idomas and the Hausas of Nigeria respectively. According to Omokpariola et al. (2021), akparata seed is a good source of protein and dietary fiber that can compare with animal protein from meat, egg and fish. Soluble dietary fiber has beneficial effects on blood glucose and lipid levels in diabetes mellitus; it lowers blood pressure and serum cholesterol. It also offers protection against cardiovascular diseases, obesity and colon cancer (Chen et al., 2016). The seed has also been reported to contain rich amounts of ash and lipids (Olorunmaiye et al., 2019). Akparata has been reported to have relatively high quantities of Iron, Zinc, Phosphorus and exceptionally high amounts of Calcium (Ukeyima et al., 2019). In Nigeria, akparata cotyledons or seeds are used as soup thickeners and its leaves are fermented and used in preparing yam pottage. In developing countries like Nigeria, attention is being drawn to the consumption of vegetables especially high quality plant proteins to combat protein energy malnutrition and enhance nutrition and food security of

the teeming population. However, there is sparse information in literature on the nutrient composition of *Afzelia africana* leaves.

Cajanus cajan popularly called pigeon pea is a leguminous shrub belonging to the family Fabaceae and the genus *cajanus*. It evolved in south Asia and appeared around 2000 BC in West Africa which is considered a second major enter of origin (Fuller et al., 2019). It is called fio-fio in Igbo, ofili in Yoruba and waken-masar in Hausa. Fio-fio is economically and nutritionally an important legume and is a major source of protein for the poor communities in developing and underdeveloped countries of the world (Karri & Nalluri, 2017). In Nigeria, the seeds of the plant are usually cooked alone or together with other vegetables, grains, roots and tubers. The seeds are reported to contain 20-22% protein, 1.2% fat, 65% carbohydrate and 3.8% ash (Sharma et al., 2011). In addition, they have been found to possess different minerals such as Calcium, Magnesium, Iron and Zinc; and vitamins such as Pro-vitamin A, Thiamine, Riboflavin, Niacin and Ascorbic acid (Karri & Nalluri, 2017). The mineral content and amino acid profile of fio-fio compares closely to those of soy bean except in methionine (Sharma et al., 2011). The seeds of fio-fio contain more minerals, ten times more fat, five times more vitamin A and three times more vitamin C than ordinary peas (James et al., 2020). Besides its nutritional value, fio-fio also possesses various medicinal properties due to the presence of a number of polyphenols and flavonoids. In Africa, different parts of the plant are used in the management of disorders such as ulcer, diarrhea, joint pain, cough, sores, dysentery,

hepatitis and measles and also used as a febrifuge (Yang et al., 2020). According to Trinidad et al. (2010), the presence of dietary fiber in fio-fio provided potential health benefits in the prevention of the risks of chronic diseases and thus has been considered as a functional food. According to Sharma et al., (2011), the leaves of *Cajanus cajan* have been widely used in traditional medicine to relieve pain and in the treatment of wounds, bedsores and malaria. However, there is dearth of information on the nutrient composition of the leaves.

Abelmoschus esculentus also known as okra is a flowering plant which belongs to the Malvaceae or mallow family (Ilodibia et al., 2016). It is an economically important vegetable crop widely grown in the tropical and subtropical regions of the world (Gemedede et al., 2014). It is a perennial native plant from Africa which is now grown in many parts of the world such as Thailand, the Middle East, the Caribbean, and the Southern States of the United States (Romdhane et al., 2020). Okra is a multipurpose crop due to its various uses of the fresh leaves, buds, flowers, pods, stems and seed (Gemedede et al., 2014). The immature green pods are consumed as vegetables, can be used in salads, soups and stews, fresh or dried, fried or boiled. These pods have a unique flavour and texture and release slimy mucilage on cooking, which can be used to thicken sauces and add smoothness to soups. Its seed may be roasted and ground to form caffeine, a free substitute for coffee (Gemedede et al., 2015). Okra has been reported to be rich in nutrients which are essential for human nutrition. The seeds of okra have been reported to be rich in dietary

fiber and protein especially lysine and tryptophan (Gemedede et al., 2014). The amino acid content of okra seed protein can be compared to that of soybean (Adetuyi et al., 2012). The young immature pods have also been reported to be rich in carbohydrates and vitamins such as beta carotene, riboflavin, thiamine, niacin and ascorbic acid (Akintoye, 2011; Gemedede, 2014; Ilodibia et al., 2017; Romdhane et al., 2020). Furthermore, the pods are excellent sources of potassium, calcium, phosphorus and magnesium and very low in cholesterol and saturated fat (Romdhane et al., 2020). In Nigeria, the leaves of okra are consumed as vegetables in soups and sauces. However, there is also no comprehensive literature information regarding the nutritive value of the leaves of okra.

Good nutrition is essential for good health. It is the process by which we procure food and utilize it for growth, keeping our bodies working properly and protecting against diseases (Ilodibia et al., 2017). Poor nutrition however has an adverse effect on the body and has been pinpointed as the major factor responsible to the deteriorating the health of individuals. The risk factors of poor nutrition include cardiovascular diseases, kidney failure and diabetes (Chopra et al., 2013; Kumar & Chopra, 2013; Ilodibia et al., 2017). In children, poor nutrition can lead to stunted growth, tiredness and lack of focus in school (Gernede et al., 2015). Akparata, fio-fio and okra leaves maybe helpful to developing countries such as Nigeria, to check malnutrition and food insecurity. This is because they are among the vegetables that are readily available and affordable in the nation. Therefore, the

aim of the study was to determine the nutritive value of fresh, sundried and shade dried *Afzelia africana*, *Cajanus cajan* and *Abelmoschus esculentus* leaves.

Objectives of the study

The objectives of the study were to:

1. determine the proximate composition of fresh, sundried and shade dried *Afzelia africana*, *Cajanus cajan* and *Abelmoschus esculentus* leaves
2. determine the vitamin (A and C) content of fresh, sundried and shade dried *Afzelia africana*, *Cajanus cajan* and *Abelmoschus esculentus* leaves
3. determine the mineral (Iron and Zinc) content of fresh, sundried and shade dried *Afzelia africana*, *Cajanus cajan* and *Abelmoschus esculentus* leaves

Materials and Methods

Study design: The study adopted an experimental study research design

Procurement of samples: The leafy vegetables *Afzelia africana* (Sm.), *Abelmoschus esculentus* (L.) Moench, *Cajanus cajan* (L.) used for this study were harvested from family farm in Ogidi, Idemili North Local Government Area of Anambra State, Nigeria. They were harvested tender, during the rainy season.

Preparation of the samples: The leafy vegetables were manually picked to carefully remove spoilt leaves. This was to reduce the microbial load and any adherent contaminants. The vegetables were divided into 3 portions. One portion was analyzed fresh. The other two portions were sun and shade dried and milled into fine powder prior to analysis for various chemical compositions. The surface area of each sample was increased by milling

process. The samples were packaged and sent to the laboratory for chemical analysis.

Proximate Analysis: Moisture, fiber, ash, and protein were determined using the standard procedures described by the Association of Official Analytical Chemists (AOAC) method (2010). The fat content was determined using the Soxhlet extraction of Pearson (1976) while carbohydrate content was determined by difference method.

Vitamin analysis: The quantity of Pro-vitamin A in the samples was determined using Harborne method described by Pearson (1976). This was then converted into its vitamin A equivalent. Vitamin C content was determined using the method described by the Institute of Public Analyst of Nigeria (2005).

Mineral analysis: Iron and Zinc content of the samples were determined using the method described by AOAC (2010).

Data analysis: Data obtained coded and analyzed using Statistical Product and Service Solution (SPSS) version 23. Descriptive (means and standard deviation) statistics were used to describe the data. Results were presented in tables.

Results

Table 1 presents the proximate composition of samples of *Afzelia africana* (akparata) leaves. The moisture content was higher in the fresh sample. The values of the protein content ranged from 15.25-20.66% while the values of ash and crude fiber ranged from 2.00-4.00% and 0.95-2.36% respectively. Sundried akparata had the highest value (27.45%) for fat while shade dried akparata had the highest value (58.01%) for carbohydrate.

Table 1: Proximate composition of *Afzelia africana* (akparata) leaves

Sample	% Moisture	% Protein	% Fat	% Ash	% Fiber	% Carbohydrate
Fresh Akparata	55.88±0.01	15.25±0.02	1.99±0.01	3.98±0.02	0.95±0.01	21.95±0.01
Sundried Akparata	14.85±0.02	17.12±0.02	27.45±0.02	4.00±0.01	2.36±0.01	34.22±0.02
Shade dried Akparata	13.46±0.01	20.66±0.01	3.97±0.02	2.00±0.01	1.90±0.01	58.01±0.02

Table 2 shows the proximate composition of *Cajanus cajan* (fio-fio) leaves. The fresh sample had the highest (61.39%) moisture content. The protein value ranged from 25.91-29.76% while the ash and fiber values ranged from

1.99-5.98% and 0.45-2.60 % respectively. The sundried sample recorded the highest value (50.11%) for carbohydrate while the fat value (3.98%) remained the same throughout the samples.

Table 2: Proximate composition of *Cajanus cajan* (fio-fio) leaves

Sample	% Moisture	% Protein	% Fat	% Ash	% Fiber	% Carbohydrate
Fresh fio-fio	61.39±0.01	25.91±0.02	3.98±0.01	2.08±0.01	0.45±0.01	6.27±0.01
Sundried fio-fio	14.71±0.02	26.96±0.02	3.98±0.01	1.99±0.01	2.25±0.01	50.11±0.02
Shade dried fio-fio	12.62±0.02	29.76±0.02	3.98±0.01	5.98±0.01	2.60±0.01	45.06±0.02

Table 3 show the proximate composition of *Abelmoschus esculentus* (okra) leaves. The fresh sample had the highest moisture (79.40%) value. The protein, fat, ash and fiber values ranged

from 10.53-25.50%, 1.99-3.98%, 1.03-1.99% and 1.03-1.22% respectively. The sundried sample recorded the highest (51.89%) value of carbohydrate in all the samples.

Table 3: Proximate composition of *Abelmoschus esculentus* (Okra) leaves

Sample	% Moisture	% Protein	% Fat	% Ash	% Fiber	% Carbohydrate
Fresh Okra	79.40±0.01	10.53±0.01	1.99±0.01	1.98±0.01	1.30±0.01	4.78±0.02
Sundried Okra	14.70±0.02	26.19±0.01	4.00±0.02	1.99±0.01	1.22±0.02	51.89±0.02
Shade dried Okra	24.00±0.01	25.50±0.02	3.98±0.01	1.03±0.02	1.03±0.01	44.2±0.01

Table 4 shows the vitamin and mineral contents of *Afzelia africana*. The shade dried sample recorded the highest values for vitamin C and Vitamin A while the fresh samples recorded the

lowest values for vitamins C and A contents. Again, the shade dried sample had the highest (60.85mg) for Iron while the sundried sample recorded the highest (29mg) value for zinc.

Table 4: Vitamin and mineral content of *Afzelia Africana* leaves

Sample	Vitamin C (mg)	Vitamin A (IU)	Iron (mg)	Zinc (mg)
Fresh Akparata	21.30±0.01	50.88.65±0.02	20.92±0.01	23.21±0.01
Sundried Akparata	54.437±0.01	1106.38±0.01	24.49±0.01	29.00±0.01
Shade dried Akparata	85.34±0.02	3314±0.01	60.85±0.02	28.62±0.01

Table 5 shows the mineral and vitamin contents of *Cajanus cajan*. The fresh sample recorded the lowest values (17.32 mg and 578.81 IU) for vitamins C and A respectively. The sundried sample had the highest (51.73 mg)

vitamin C content while the shade dried sample had the highest (2620.38 IU) vitamin A values. The Iron and Zinc values ranged from 23.82 – 45.74 mg and 27.51 – 51.08 mg respectively.

Table 5: Vitamin and mineral contents of *Cajanus cajan* leaves

Sample	Vitamin C (mg)	Vitamin A (IU)	Iron (mg)	Zinc (mg)
Fresh fio-fio	17.32±0.01	578.81±0.02	23.82±0.01	51.08±0.01
Sundried fio-fio	51.73±0.02	2094.67±0.02	45.74±0.01	27.51±0.01
Shade dried fio-fio	24.72±0.01	2620.38±0.01	37.81±0.01	32.86±0.01

Table 6 presents the vitamin and mineral contents of *Abelmoschus esculentus* leaves. The vitamin C value ranges from 17.42 – 39.84 mg, with the shade dried sample having the highest value. The fresh sample had the lowest

vitamin A value while the sundried sample had the highest vitamin A value. The shade dried sample had the highest (125.28 mg) Iron content while the fresh sample had the highest (51.08 mg) Zinc content.

Table 6: Vitamin and mineral contents of *Abelmoschus esculentus* leaves

Sample	Vitamin C (mg)	Vitamin A (IU)	Iron (mg)	Zinc (mg)
Fresh Okra	17.42±0.01	578.81±0.02	23.82±0.01	51.08±0.01
Sundried Okra	26.67±0.02	2335.36±0.01	57.94±0.02	31.41±0.02
Shade dried Okra	39.84±0.02	2164.10±0.01	125.28±0.02	30.57±0.01

Discussion

Moisture content of a food sample simply refers to the quantity of water contained in the food. The higher

moisture content of the three fresh vegetables samples is expected. Fresh vegetables are known to contain more water than either sun or shade dried

vegetables. However, the higher the moisture content, the more susceptible it is to microbial contamination and rapid deterioration. Neela and Fanta (2019) reported the same phenomenon in fresh sweet potato leaves. Drying is one of the most important and cheap methods developed to extend the shelf life of foods and increasing the availability of nutrients to consumers. The lower moisture content observed in the shade dried and sun dried akparata, fio-fio and okra leaves as compared to the fresh samples is a desirable property which according to Raji et al. (2016), will prevent microbial activities and hence increase the storage duration of the leaves.

Proteins are essential organic compounds that help in the building and maintenance of all tissues in the body; it forms an important part of enzymes, fluids and hormones in the body and also helps form antibodies to fight infection and supplies energy (Raji et al., 2016). The present study revealed that shade drying and sun drying has an effect on the protein content of the vegetable samples. The results showed that there was an increase in the protein content of these samples as a result of the drying methods. The higher protein levels of the samples could be attributed to loss of moisture. It is known that the lower the moisture content of foods, the higher are their nutrient density of which protein is one (Igbatin, 2011). Furthermore, according to Pearson (1996), plant food that provides more than 12% of its calorific value from protein is considered good source of protein. Therefore, the shade dried and sun dried akparata, fio-fio and okra leaves met this criterion and thus, can

be considered as good sources of protein.

Crude fats refer to the mixture of fat soluble materials present in a sample. Fats nourishes the body with essential fatty acid which the body cannot synthesize. It also provides the body with energy and helps in body building. The results of the study showed that shade drying and sun drying has an effect on the fat content of the three vegetable samples. The increase in the fat content of the samples compared to the fresh samples is in agreement with Odimegwu et al. (2016) who also reported an increase in the fat content of dried akparata seeds. This increase is attributed to the chemical nature of fats of dried samples which during pulverization, ruptures the fat cells and brings it to the surface. Fats and oils aid in blood pressure regulation and is involved in the synthesis and repair of vital cell parts (Ilodibia et al., 2017).

Ash content gives a measure of total amount of inorganic compounds, like minerals, present in a sample. The result shows that drying generally increases the ash content of akparata, fio-fio and okra leaves. The ash values for the three vegetables were controlled by varietals differences and treatments. Shade drying of fio-fio and okra as well as sun drying for akparata appeared to be the food processing techniques to increase ash (mineral) in these vegetables. This increase could be as a result of some inorganic salt trapped in the vegetables during drying. Similar findings have been reported in pumpkin leaves (Raji et al., 2016; Odimegwu et al., 2016). According to Odimegwu et al. (2016), the lower ash content in the fresh samples could be attributed to the presence of anti-nutritional factors that

chelates the minerals present in the fresh samples which have not been inactivated by the loss of moisture.

Dietary fiber refers to the edible parts of plants that are resistance to digestion and absorption in the human small intestine with complete or partial fermentation in the large intestine. The result of this study showed that the crude fiber content of the three vegetable samples generally increased when dried. This increase in fiber content maybe advantages since the vegetables could enhance digestion and prevent constipation when consumed. High crude fiber according to Gemedede et al. (2014) could also help in blood cholesterol and glucose attenuation when consumed. Increasing the fiber content of the diet increases the faecal energy excretion, principally in the form of fats and nitrogen and by virtue, water holding capacity. Fiber also helps in the formation of soft stools with bulk, which can be easily evacuated (McRorie & McKeown, 2017).

Carbohydrates are organic compounds found in foods and drinks which when consumed provides the body with energy. They may also help prevent stomach or intestinal problems such as constipation. The carbohydrate content of the fresh vegetables of fio-fio, okra and akparata is expected because fresh vegetables in general are poor sources of carbohydrates. On the other hand, the varied increases in carbohydrate for the three dried vegetables samples could be due to loss of moisture which precipitated the increases. This increase is also in agreement with reports by Ilodibia et al. (2017) who all reported similar trends. The result therefore indicates that akparata, fio-fio and okra leaves may be

considered as a good source of carbohydrates in the dried form, for body growth and development.

Vitamins are essential micronutrients which the body needs in small quantities for proper functioning and metabolism. The vegetables, dried by different methods have a good yield of vitamin A and C. Vitamin C is an essential vitamin involved in the repair of tissues, formation of collagen, and the enzymatic production of some neurotransmitters. It is vital for healthy teeth, gums and bones and is important for proper functioning of the adrenal and thyroid glands (Omokpariola et al., 2021). It is important to note that vitamin C is a water soluble antioxidant which according to Fernandez-Lasaro et al. (2020) stimulates the absorption of soluble iron by reduction process. The vitamin C content obtained in this study was higher than that in Omokpariola et al. (2021). This indicates that sundried and shade dried akparata, fio-fio and okra leaves are potential sources of vitamin C. Similarly, the results showed high levels of vitamin A in the dried samples. The recommended dietary allowance for vitamin A is 3000 IU. This implies that dried samples of akparata, fio-fio and okra leaves can supply up to 73%, 78% and 75% respectively of the required daily vitamin A when consumed in sufficient quantities. Thus, these vegetables are good sources of vitamins A and C and can help check vitamin A and C deficiencies in developing countries.

The result of the mineral content of the plants shows that the mineral compositions of the three samples vary considerably in the iron and zinc content. Iron is essential in the formation of blood in the body. The

samples have considerable amount of iron indicating that they are potential sources of iron when consumed in sufficient quantities. Therefore, they can serve as important tools in fighting iron deficiency most especially in the developing countries. The iron content found strongly agrees with James et al. (2020) who reported similar findings. Zinc is an important trace element which plays vital roles in the body during metabolism it plays important role in the normal growth and development during pregnancy, childhood and adolescence. The result reveals that the vegetables under evaluation are potential food sources of zinc and thus, according to James et al. (2020), are capable of supplying over 50% of the daily human need of zinc.

Conclusion

In conclusion, *Azalia africana*, *Cajanus cajan* and *Abelmoschus esculentus* leaves have high moisture content. When sun dried or shade dried, they are good sources of protein, carbohydrates, fats and fiber as well as vitamins such as vitamin C and A, and minerals such as iron and zinc. The two drying methods evaluated in the study can be considered efficient in terms of retained proximate composition, vitamins and minerals.

Recommendations

From the outcome of this work, it is recommended that:

1. The nutritional societies in Nigeria such as the Nutrition Society of Nigeria (NSN) should educate its members as well as the general public on the good nutritional values of these leaves.

2. Agricultural organizations and food agencies such as Food and Agricultural Organization (FAO) and National Agency for Food and Drug Control (NAFDAC) should also educate farmers and food producers on the nutritive value of these vegetables to avoid them been discarded during harvest.

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Influence of Societal Perception and Societal Support on the Participation of Female Students in Technical Education in Nigeria

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Abstract

Technical innovation is considered as one viable means for global development, as it affords both male and female relevant skills to make positive changes in their world. However, participation of female gender in technical Education in Nigeria and largely in Africa compared to other developed continents is relatively low and this largely has to do with the role the society play in influencing dominance of male gender in this area. The purpose of this study was to determine the influence of societal perception and societal support on the participation of females in technical education in Nigeria. Two research objectives and hypothesis guided the study. A correlational research design was adopted for the study. The sample for the study was 150 female students from five secondary schools in Enugu State. Three structured questionnaires titled societal perception questionnaire, society support questionnaire and students' technical education participation questionnaire were developed by the researchers and used for data collection. Three experts from the Department of Industrial Technical Education, University of Nigeria, Nsukka validated the instruments. Data collected were analyzed using correlation analysis for the research questions, while the hypotheses were tested using simple linear regression at 0.05 level of significance. It was discovered that there was a significant relationship between societal support and female students' disposition towards participating in technical education.

Keywords: Technical Education, Societal Perception, Societal Support, Female Students, Nigeria

Introduction

Technical Education basically helps to prepare people for skillful performance on practical tasks as it involves acquisition of skills and competencies that can help individuals to function productively in industrial and commercial occupations (Wapmuk,

2011). Globally, technical education has been seen as a very important tool for empowering people and providing them with skills, knowledge and attitudes for effective employment in specific occupations. According to Okwelle (2013), technical education is a deliberate intervention to bring about

learning which would make people more productive in designated areas of economic activity. This means it equips people with manipulative ability for production of goods and services, which serve as a catalyst in the process of change in the society. Ayonmike (2014) also posited that technical education has become one of the key policy priorities in education and training in Nigeria due to the recognition of its effects on social and economic empowerment of the society. In Nigeria, technical education has been identified to provide requisite skills and build human capacities especially in key priority areas including science, technology and engineering that support the achievement of its vision of becoming a prosperous and industrial nation by the year 2020 (Ayonmike, 2014). However, despite all these huge opportunities that technical education provides, participation of the female gender in this field is relatively low.

Gender refers to society's division of humanity, based on sex, into two distinctive categories (Iféanacho, 2009). Gender guides how females and males think and see themselves, how they interact with others, and what position they occupy in society as a whole. Thus, gender basically operates as a dimension of social inequality. In the observation of Simipri (2015), women constitute the majority of the unskillful adults and as a result, women do not have equal opportunities to contribute meaningfully to the development of the society. In both rural and urban areas, many women perform unskilled and menial jobs while some occupy the lowest cadre in the job hierarchy. They earn little wages after putting in much

effort (Amaechi, 2014). This is further established by Aminigo (2006) who reported that there is gender difference in all socio-economic attributes of income, wages, skills, health. This has led to widened poverty in developing countries because women cannot have access and control over resources, benefit from economic opportunities, and influence their power in political arena.

Technical education and training of both men and women is very vital for the overall development of the nation because both boys and girls have vital roles to play towards the growth and development of the society. However, this is not the reality in Nigeria where out-of-school children especially girls is still on the increase in addition to child marriage and labor. Erinoshio (1997) in Edu and Edu (2012), observed that in the past, neither traditional nor western education in Nigeria encouraged or provided equal opportunities for women to enter the field of technical education in Nigeria. The participation of women in technical education programmes in Nigeria institutions is still very poor when compared to enrollment in general education programmes (Aina, 2006; Hubert, 2006; and Yakubu, 2006). The factors affecting participation of girls in technical education programmes according to Ayonmike (2015); Igbiniedion and Ojeaga (2012) among others is poor societal perception and support.

Perception in the opinion of Wonacott (2012) is the process whereby people select, organize and interpret sensory stimulations into significant information about their environment. He also argued that perception is the single most important determinant of

human behaviour stating further that, 'there can be no behaviour without perception'. Therefore, perception of a person is actually influenced by the attitude of that person. Perception is the manner in which something is seen, understood and regarded. Arnould et al. (2019), sees perception as the way people view and interpret the world around them. Unarguably, Female are under-represented in many of the technical education and skills acquisition programmes as a result of societal perception (Wonacott, 2012). Societal perception could be seen as the way the society sense and interpret female participation in apprenticeship programme (Okwelle, 2013). The participation of the female child in some fields and skills acquisition has become a major concern to stakeholders in education. According to Okorafor (2014), this societal perception of female child take the form of belief that the male children typically are responsible for supporting parents in their old age and will continue the lineage of the family in terms of name. This, therefore, makes the education of the male child more attractive to parents whereas they believe that female, upon marriage, join their husband family, change their surname and take with them the benefit of all the education and skills acquired. This makes parents have little or no interest in bearing the costs of educating or training female children in vocations (Okorafor, 2014). According to Gupta et al, (2014) presently, multiple and inter-linked social norms dictate young girls' choice of capabilities. These discretionary social norms and practices still compress female children capability and compound their exclusion to

participating in certain apprenticeship programme. According to Aina as cited in Ayonmike (2014) opined that since the introduction of technical education in Nigeria, female participation in technical education and training programmes has remained poor because it lacks societal support.

Social support according to Berkman et al. (2000) is a complex concept, with varying definitions. For instance, it has been described in terms of a social network structure, often measured quantitatively (Hirsch, 1980; Hutchinson, 1999), which is comprised of a set of significantly present others through which social support is gained. It is also the perception and actuality that one is cared for and has assistance available from other people, and most popularly, that one is part of a supportive group of people (https://en.wikipedia.org/wiki/Social_network). These supportive resources can be emotional (e.g., nurturance), informational (e.g., advice), or companionship (e.g., sense of belonging); tangible (e.g., financial assistance) or intangible (e.g., personal advice). It is against this back drop that the study seeks to identify the influence of societal perception and societal support on the participation of female students in technical education in Nigeria.

Purpose of the study: The main purpose of the study was to identify the influence of societal perception and societal support on the participation of female students in technical education in Nigeria.

Specifically, the study determine the;
1.relationship between societal perception and the participation of

female students in technical education in Nigeria and

2. relationship between societal support and the participation of female students in technical education in Nigeria will also be examined in the study.

Null Hypotheses

Ho1: There is no significant relationship between societal perception and the participation of female students in technical education.

Ho2: There is no significant relationship between societal support and the participation of female students in technical education.

Methodology

Research Design: The study adopted a correlational design. A correlational design seeks to establish the degree of relationship that exists between two or more variables. A correlational research design indicates the direction and magnitude of the relationship between two or more variables. The rationale for adopting this design is to determine the relationship among societal perception, societal support and participation of female students in technical education.

Population for the study: The area of the study was Osogbo local government area, Osun State, specifically Osogbo which is the capital of Osun State. Osogbo has two local government area they are Osogbo Local Government Area and Olorunda Local Government Area. Osogbo Local Government Area has 33 public secondary schools with a population of 6,382 female students.

Sample selection: The total population of the study comprised of 6,382 female students in Osogbo LGA. The sample for the study consisted of 150 female

students and it was conducted in five secondary schools, in Osun State. A two-stage sampling technique was used to sample schools, respondents. Random number table was used in the first phase to randomly select 15% of the secondary schools from the 33 schools in Osogbo LGA. This gave a total of five secondary schools. The last stage involved a simple random sampling was used to sample and select thirty female students from each school.

Instruments for data collection: Three sets of instruments were developed by the researchers and used for data collection in this study, they were the Societal Perception Questionnaire (SPQ), Societal Support Questionnaire (SSQ) and Student Participation Inventory (SPI). The Societal Perception Questionnaire (SPQ) was divided into two sections, Section A and Section B. Section A contains items that sought demographic information from the students. Section B consists of 15 items that sought to assess societal perception of them participating in technical education. Some of the items include "the society believes that technical education is only for males" and "people in my society believe that women in technical education are not reliable." The items were negatively worded therefore the items were reverse scored. The items were based on a four point rating scale of Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD) with values of 1, 2, 3, and 4 respectively.

The Societal Support Questionnaire (SSQ) was also divided into two sections, Section A and Section B. Section A contains items that sought demographic information from the students. Section B consists of 16 items

that sought to determine student's societal support of them participating in technical education, some of the items include *"my society my society will not appreciate me if am studying technical education"* and *"I feel that my society will not support my decision to study technical education."* The items were negatively worded therefore the items were reverse scored. The items were based on a four point rating scale of Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD) with values of 1, 2, 3, and 4 respectively.

Finally the Student Participation Inventory (SPI) was also divided into two sections, Section A and Section B. Section A contains items that sought demographic information from the students. Section B consists of 11 items that sought to assess student's willingness to participate in technical education, some of the items are *"I am able to get a good grade in my technical education classes if I participate fully."* and *"I am ready to participate in technical education because of my future career."* The items were based on a four point rating scale of Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD) with values of 4, 3, 2, and 1 respectively,

Validation and reliability test of the instruments

The instruments were face validated by three experts. The three experts were from the Department of Industrial Technical Education, University of Nigeria, Nsukka. The expert made some inputs that were integrated to improve the final copy of the instrument. Reliability of the study was determined using Cronbach Alpha method, the instruments were trial tested on female

secondary students in Ondo State and it was observed that Societal Perception Questionnaire (SPQ) had a reliability value of 0.76, Societal Support Questionnaire (SSQ) had a reliability of 0.83 and the Student Participation Inventory (SPI) had a reliability of 0.72. This implies that the reliability value is relatively high since 76%, 83% and 72% of the test score is reliable respectively. The data was collected by administering the questionnaire directly on the respondents by the researchers and two research assistants.

Data and Statistical Analysis: Data analyses were carried out using SPSS 22.0 as statistical package. The maximum obtainable score for SPQ is 60 while the minimum obtainable score is 15, the lower the score the poorer the societal perception. The maximum obtainable score for SSQ is 64 while the minimum obtainable score is 16, the lower the score poorer the societal support. While the maximum obtainable score for SPI is 44 and the minimum obtainable score is 11, scores from 22-44 show high female participation the higher the score the higher the participation. The statistical tools employed were, correlation analysis and simple linear regression. For the test of significance, the probability (p) value was used in comparison with the alpha value of .05, and at other relevant levels. If any item has a probability value greater than .05 ($P>0.05$) it will be concluded that there is no significant difference in the mean responses of the respondents. While Pearson correlation will be used to answer research questions 1 and 2.

Results

The results presented in Table 1 depict the relationships among societal perception, societal support and female participation. The table shows that there is a moderate correlation between societal perception and female participation (.467). The positive relationship between societal perception and female participation indicates that when the value of societal perception

increases the value of female participation also increases. The table also shows that there is a moderate correlation between societal support and female participation (.361), the positive relationship between societal support and female participation indicates that when the value of societal support increases the value of female participation also increases.

Table 1: Pearson correlations between the variables

Variable	Societal Perception	Societal Support	Female Participation
Societal Perception	1		
Societal Support	.339	1	
Female Participation	.467**	.361**	1

**; values are significant at $p < 0.001$

Null Hypothesis 1: There is no significant relationship between societal perception and the participation of female students in technical education.

Table 2 highlights the model summary of Regression analysis between societal perception and female student participation. It shows the value of correlation coefficient that is R and coefficient of determination that is R^2 . The value of R represents the simple Pearson's correlation. The value of coefficient of determination (R^2) indicates how much of the variation in the independent variable (societal perception) can explain the dependent variable (female student participation). The table shows that the value of R is .467 which is moderately close to 1.00. The value of R^2 is .106 which means that 10.6% variation in female student participation is explained by societal perception.

The Table also provides details of models parameters (Beta values) and

significance of these values. The unstandardized Beta coefficient gives measures of the contribution of each variable to the model. It is clear from table 3 that the value of unstandardized Beta is 1.133 which represents the gradient of regression line. Therefore, if the value of predictor variable (societal perception) is increased by one unit, there is 1.133 unit increased in the outcome variable (female participation). The value of unstandardized Beta also indicates that there is a moderate and positive influence of societal perception on Female student participation. This impact is statistically significant because sig. value $p < 0.000$ which is less than .05 (95% confidence interval). Therefore, the null hypothesis is rejected. It may be concluded that there was a positive and significant relationship between societal perception and Female student participation in technical education.

Table 2: Model Summary of Regression Analysis between societal perception and female student participation

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	R	R Square
	B	Std. Error	Beta				
(Constant)	308.319	9.495		32.471	.000	.467	.106
Societal perception	1.133	.080	.910	14.076	.000		

Null Hypothesis 2: There is no significant relationship between societal support and the participation of female students in technical education.

The above Table 3 highlights the model summary of Regression analysis between societal support and female student participation. It shows the value of correlation coefficient that is R and coefficient of determination that is R². The value of R represents the simple Pearson's correlation. The value of coefficient of determination (R²) indicates how much of the variation in the independent variable (societal support) can explain the dependent variable (female student participation). The table shows that the value of R is .361 which is moderately close to 1.00. The value of R² is .016 which means that 1.6% variation in female student participation is explained by societal support.

The Table also provides details of models parameters (Beta values) and

significance of these values. The unstandardized Beta coefficient gives measures of the contribution of each variable to the model. It is clear from table 5 that the value of unstandardized Beta is .731 which represents the gradient of regression line. Therefore, if the value of predictor variable (societal support) is increased by one unit, there is .731 unit increased in the dependent variable (Female student participation). The value of unstandardized Beta also indicates that there is a moderate and positive influence of societal support on Female student participation. This impact is statistically significant because sig. value (p) is .000 which is less than .05 (95% confidence interval). Therefore, the null hypothesis is rejected. It may be concluded that there was a significant relationship between societal support and Female student participation in technical education.

Table 3: Model Summary of Regression Analysis between societal support and female student participation

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	R	R Square
	B	Std. Error	Beta				
(Constant)	244.879	9.631		33.761	.467	.361	.016
Societal support	.731	.052	.910	9.323	.000		

a. Dependent Variable: Female student participation

Discussion of Findings

This paper was embarked on to determine if a relationship exists between the two independent variables (societal perception and societal support) and the dependent variable (female students' participation). Results show that there was a positive significant relationship between societal perception, societal support and female students' participation. This is in line with what is observed generally in our society, it is believed that some particular tasks or jobs are for males while some are seen as jobs for female. In the same vein technical education and engineering related courses have been stereotyped to be for males, they feel that males can perform better because they are more inclined to fixing and repairing. Some also believe that males are better in calculations and since technical education involves detailed calculations for production it is erroneously believed that female students will not be able to thrive in the program, therefore female students may not receive as much support as their male counterparts if they show an interest in pursuing a career in technical education. The findings were consistent with those of Wonacott (2012) and Ayonmike (2014) who observed that the way the society perceives the female gender affects their participation and selection of some choices. This is because the society believes that some courses or careers are meant for only male students. Similarly, Igbiniedion and Ojeaga (2012) pointed out that factors which may affect participation of females in technical education programmes can be caused by the

society. He further stated that if the society does not change its perception about the role of females in the workforce, there will be a shortage of female participants in some career areas.

This study equally found that an improved societal support is essential to enhance the participation of female students in technical education. This is also in line with the findings of Edewor (2011) who opined that since the introduction of technical education in Nigeria, female participation in technical education and training programmes has remained poor because it lacks societal support. If the society makes a determined effort to implement more gender inclusion policies and shun the erroneous belief that technical education is only for males this will go a long way in increasing female participation, because some societies deny female students from participating in technical education simply because of their gender. Also increased societal support will improve the confidence and self-belief of females to pursue a career in technical education and this might increase the participation of female students. This result is expected because of the role societal support plays in various life activities most especially in educational settings. It is an established fact that the decision to engage in an activity is determined by the level or degree of support an individual receives from significant people around him or her.

Conclusion

From the result of the study, societal perception and support has the possibility to dictate the level of female student's participation and interest in their chosen field of study. If the gender stereotype attached to technical education is removed, more girls might be encouraged to pursue a career in the technical disciplines. Furthermore, female participation in technical education could also increase if families and the wider society provide encouragement and incentives as well as moral and financial support for young girls even at secondary school level.

Recommendations

Based on the findings of this study, the following recommendations were made:

1. Since societal perception influences female participation, thorough efforts should be made by Government, Media companies and school administrators to ensure that the societal perception on female participation is improved.
2. Parents and the society at large should try to support female students to participate in technical education.
3. Workshops and seminars should be arranged for stakeholders in technical education to inform them of the importance of societal support in improving female participation in technical education.

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Use of Social Media Platforms for Consumer Information on Green Household Products by Online Marketers in Selected Faculties in the University of Nigeria

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Abstract

The study explored the use of social media platforms for consumer information by online marketers on green household products by online marketers in selected faculties in the University of Nigeria. Two research questions were formulated for this study; (1) what are the social media platforms useful for consumer information on green household products. (2) to what extent are social media platforms used to enhance consumers' awareness in patronising green household products. Two null hypotheses were tested at 0.05 level of significance. The population for the study was 60 online marketers; 30 male and 30 female post graduate students of two selected faculties in the University of Nigeria, Nsukka, in Enugu state Nigeria. A structured questionnaire was used as the instrument for data collection and was validated by three experts. The data collected was analysed using SPSS version 23. Based on the findings, it was observed that a good number of the student online marketers of green household products do not make use of all the social media platforms available. It was also revealed that the only social media platforms highly used to inform consumers about green household products were YouTube, Instagram, Facebook, and WhatsApp. The study recommends, among others, that due to digitalisation, marketers of green household products can tap into diverse social media platforms for creating awareness on the health benefits of using green household products and their sustainable effects on the environment.

Keywords: Green Household Products, Consumers, Environmental Sustainability, Social Media Platforms.

Introduction

The high rate of population increase and the indiscriminate consumption patterns have brought challenges to the environment, including pollution, global warming, and depletion of natural resources. These challenges directly affect sustainability of economic development, the environment, and human health. In a mission to mitigate

the aforementioned challenges, the term 'green product' emerged. Green products are ecologically safe products that facilitate the long-term objective of protecting human lives and preserving the natural resources. These products minimize unfavourable impacts on the environment and humans, conserve energy and reduce the use of toxic agents during product design

and actual production, and are certified by an acknowledged organisation (Kumar & Ghodeswar 2015; Diglel & Yazdanifard 2014; Eneizan & Wahab 2016). Green products come in various forms; some are recycled from former goods and then reused. Some are considered efficient by saving water, energy, gasoline, and money. The American Marketing Association (2012) listed household products to include: baby care items, kitchen equipment and utensils, beddings, laundry equipment, electronic devices and other household furniture and fixtures.

Compared to the conventional household products, green household products are organic, conserve energy, renewable, give a better quality of life, reusable, recyclable, healthy and have little impact on humans and the environment at large (Dangelico & Pontrandolfo, 2017). Other similar terms used in the literature for green products include environmental products, ecological products, eco-friendly product, and sustainable products. For the purpose of this study, green products include organic soap, virgin coconut or carrot oil, Shea butter (*vitellaria paradoxa*) moisturizer or shampoo, led bulbs (energy-saving bulbs), solar panel/phone charger, energy saving refrigerators/freezers, rechargeable fan, silicone reusable food bag, reusable bamboo kitchen utensil, biodegradable dental floss, solar lantern and cloth or cotton shopping bag among others.

Green products offer high quality and are characterised by efficient use of natural resources with low risks to the environment when compared to the non-green products (Albino, et al. 2009). The characteristics of these products

have encouraged the environmentally conscious individual to shift their consumption preferences from non-green product to the environment-friendly green products (Deng, and He, 2020). There is, therefore, a need for adequate information on green household products and why these are better than non-green household products. Companies must encourage interactive marketing activities in which marketers provide consumers with information about the company's green household products via various social media platforms.

Through social networking sites, marketing activities have been transferred from the physical to the virtual world. Umekachikelu (2013) asserts that many Nigerians, including the rich and the poor, educated and illiterate, young and old, irrespective of religion, now enjoy social media services. As a result, companies consider social media platforms vital for creating awareness of any product available (Ebrahim, 2020). Social media comprise internet-associated applications anchored on technological Web 2.0 principle. Social media enable the production and sharing of contents generated by users due to their interactive characteristics that facilitate knowledge sharing, collaborative, and participatory activities available to larger communities than traditional media such as radio, television, and print. Social media platforms include blogs, internet forums, consumer's review sites, social networking websites like Twitter, Instagram, Blogger, LinkedIn, and Facebook and Wikis (Arrigo, 2018; Cheung et al., 2021). Most marketers use online marketing strategies such as blogger

endorsements, advertising on social media sites, and leveraging contents generated by users to build product awareness among consumers (Wang & Kim, 2017; Agha 2017; Nur, 2021). Nguyen, Nguyen, and Hoang, (2019) found out that the information on green products would increase people's behavioral intention to use these products and consequently become green consumers.

Consumers are critical to the survival and growth of manufacturing companies. Any company that wants to exist and thrive must provide valuable and unique products that meet the wants and needs of consumers. Chiang, et al. (2019) referred to a consumer as a person who has specific needs and demands to be fulfilled and has to purchase a product traditionally or online to satisfy the requirement. Consumers are becoming more conscious of environmental and health issues as they become more focused on green marketing and green product purchasing. (Sawnt 2015, Singh & Mehra, 2020). Choshaly and Mirabolghasemi (2020) opine that when a consumer purchases or consumes a product, it directly or indirectly affects the environment. Consumers are motivated to reduce health issues and environmental harm by considering their purchase decisions and consumption patterns in this modern time (Samarasinghe, 2012).

Due to the increase in environmental pollution and degradation, environmental sustainability is fundamental to the survival of our planet and the human beings who occupy the planet. Human beings, including marketers and consumers, are dependent on the

environment and its resources to survive; at the same time, the protection of the environment is dependent on human beings. The environment refers to consumers' objective and subjective physical and social circumstances and includes man and his interaction with water bodies and aquatic life, landmass, forests, grasslands, deserts, and animals (Gana & Toba, 2015). Environmental sustainability has increased consumers' sensitivity towards purchasing environment-friendly products (Kumar, 2020). People who have concern for the environment are more likely to buy green products (Lestari et al., 2020). To increase consumption of green products, marketers are encouraged to use diverse methods, including social media platforms, to create awareness about green household products and their importance in protecting and conserving natural resources.

Literatures abound on research works conducted on the uses and influence of social media on consumers, indicating that social media has become an important component of marketing information throughout the current business environment. Al Amin et al. (2020) revealed that various social media platforms used for consumer information need to be in agreement to deliver a holistic and effective message that will satisfy both organisational and consumer needs. In the same vein, Al-Abdallah, et al. (2021) opined that social media activities may undoubtedly assist with green products awareness, consumer opinions and crowd sourcing and also plenty of branding chances. According to Zuhdi et al. (2019), consumers share and exchange knowledge, information, and experiences about a product on social

media platforms. Again, Zuhdi et al., (2019) also expressed that the benefit of comments and likes from other consumers helps potential and prospective consumers to choose between different online business pages for different green household products. On the other hand, Al Amin et al., (2020) strongly recommend that companies can greatly boost the consumption of green products and encourage sustainable environment by using the huge reach of consumers through social media. In today's environment, social media plays an important role in influencing what people think about green products, which eventually influences the success factor of various businesses (Al Amin et al., 2020). Chiang, et al. (2019) also mentioned that consumers' online buying patterns are trending with the impact of social media platforms. In many cases, social media influences people to buy impulsively. Again, Al Amin et al., (2020) expressed that online businesses are now engaging consumers through social media platforms by raising awareness of green products and, subsequently, affecting businesses positively, thereby, increase the level of environmental sustainability.

Unfortunately, despite digitalisation, online marketers of household products operating in Nigeria, particularly in Enugu state seem to under utilise the social media platforms available in providing valuable information on green products for environmental sustainability. They also lack consistency in adequately informing consumers about a green product, suitable media platforms for business posts, signing in regularly to

link up with consumers for networking, making individual business posts with creative information, posting relevant images or captions to consumers, and building good customer engagement for enquiries and quick responses. Therefore, this research becomes necessary.

Purpose of the study

The main purpose of this study is to determine the use of social media platforms for consumer information on green household products for environmental sustainability in Enugu State, Nigeria. Specifically, the study sought to;

- ❖ determine the social media platforms that are used to inform consumers about the purchase of green household products, and
- ❖ examine the extent of using of social media platforms to enhance consumers' awareness and for purchasing green household products.

Hypotheses

The following null hypotheses were formulated and tested at 0.05 level of significance:

Ho1. There is no significant difference in the mean responses of male and female marketers of green household products on social media platforms that are useful for consumer information.

Ho2. There is no significant difference in the mean response of male and female marketers of green household products on the extent of using social media platforms to enhance consumer awareness and for patronising green household products.

Methodology

Study design: Descriptive survey research design was adopted for the study. According to Nworgu (2015) descriptive survey research design is that in which information is gathered from unbiased representative group of interest using questionnaire, interview, and observation. Descriptive survey design was found suitable for this study because data were collected from the respondents using questionnaire. The study was carried out in Enugu State, Nigeria.

Population for the study: The population for the study comprised all the postgraduate students of Faculty of Vocational and Technical Education, University of Nigeria, Nsukka and Faculty of Business Administration, University of Nigeria, Enugu campus within the 2020/2021 academic session. Out of these students, 60 persons identified as online marketers/retailers who deal in green household products.

Sample size selection: Due to the manageable size of the population, the entire population was involved in the study. Therefore, there was no sampling of the respondents.

Instrument for data collection: The questionnaire titled Using Social Media Platforms for Consumer Information on Green Household Products (USMPCIGHP) was developed by the researcher from relevant literature and used for data collection. The questionnaire items were rated on a 4-point scale – strongly agree (4), agree (3) disagree (2) and strongly disagree (1).

Validation and reliability test of the instrument: The questionnaire was subjected to face validation by three lecturers in the Department of Business

Education, University of Nigeria, Nsukka. Cronbach Alpha technique was used to test the reliability of the instrument and coefficient. 0.85 was obtained, which indicates that the items of the instrument had high internal consistency.

Method of data collection: Sixty copies of the questionnaire were hand distributed to the respondents with the help of two research assistants. They were given about ten minutes to respond to the questions, after which all the copies of the questionnaire were immediately collected back. This gave a return rate of 100%.

Data and statistical analysis: The data collected were analysed using SPSS version 23. For research question one, any questionnaire item with the mean value of 2.50 and above indicated that the respondents agreed while any item with mean value below 2.50 indicated disagreed. For research question two, any questionnaire item with mean value of 2.50 and above indicated used, whereas any item with mean score less than 2.50 was taken to indicate not used. The null hypotheses were tested at 0.05 level of significance using t-test.

Results

The data in Table 1 show that 12 out of 19 items had their mean values range from 2.58 to 3.89 above the criterion value of 2.50. This implies that the respondents agreed that Instagram, WhatsApp, Facebook, Google, Myspace, LinkedIn, YouTube, Tumblr, Pinterest, Skype, Squarespace, and Twitter are useful social media platforms for marketing green household products while they disagreed that Plurk, Yookos, Flickr, Vimeo, Stumble upon, Snapchat, and Walmart are useful social

media platforms for marketing green household products. The table also revealed that the items had their standard deviations ranged from 0.18 to 1.01. This showed that the respondents were not far from the mean and from one another in their opinion. The table also shows that platforms such as; Plurk, Flirkr, and Squarespace had significant difference in the mean responses of male and female respondents ($p < 0.05$). Mean responses on Instagram, WhatsApp, Facebook,

Google, Myspace, LinkedIn, YouTube, Tumblr, Yookos, Pinterest, Vimeo, Stumble Upon, Snapchat, Skype, Walmart and Twitter showed no significant difference ($p > 0.05$). Therefore, the null hypothesis one was not rejected on those items as postulated because no significant difference existed in the mean responses of the respondents on the social media platforms used for consumer information on green household products.

Table 1: Mean ratings and standard deviations of respondents on social media platforms useful for consumer information on green household products N=60.

Item	Means	Standard deviation	t-values	Remarks	Decision
Instagram	2.58	.91	1.38	A	Not significant
WhatsApp	3.77	.69	.80	A	Not significant
Facebook	3.89	.62	1.45	A	Not significant
Google	2.93	.58	1.81	A	Not significant
Myspace	2.62	.89	1.40	A	Not significant
LinkedIn	3.60	.79	1.08	A	Not significant
YouTube	3.84	.66	.71	A	Not significant
Tumblr	2.71	.77	.81	A	Not significant
Plurk	1.60	.00	.00	D	Significant
Yookos	1.32	.32	1.46	D	Not significant
Flickr	1.99	1.01	-1.63	D	Significant
Pinterest	2.92	.99	1.11	A	Not significant
Vimeo	1.06	.23	3.08	D	Not significant
Stumble Upon	1.21	.48	1.48	D	Not significant
Snapchat	1.47	.18	1.49	D	Not significant
Skype	3.09	.88	1.42	A	Not significant
Squarespace	2.60	.80	-1.10	A	Significant
Walmart	1.75	.77	1.64	D	Not significant
Twitter	3.01	.99	1.28	A	Not significant
Cluster mean	2.52	0.66	1.04	A	

The data in Table 2 show that only Facebook and WhatsApp were highly used with mean value of 3.59 and 3.75. This implies that the respondents used these two social media platforms more

than others. The rest of the platforms were slightly used with mean values of 1.00- 1.83. The standard deviations for all the items ranged from -1.37 to 1.15. The values of the standard deviation

indicated that the respondents were close to one another in their opinions. The table shows that the mean responses of male female respondents showed no significant difference except

in the use of Squarespace, Pinterest and Google ($p < 0.05$). Therefore, null hypothesis two was partly rejected and partly upheld.

Table 2: Mean ratings and standard deviations of respondents on the extent of using social media platforms by marketers to enhance consumer awareness and for patronising green household products (N=60).

Item Statement	Mean	Std dev	t values	Remarks	Decision
Marketers use skype for consumers.	1.41	.80	.45	Slightly used	NS
YouTube is being used to communicate with consumers.	1.48	.86	1.64	Slightly used	NS
Squarespace is applied by marketers for consumers.	1.00	.00	.00	Slightly used	S
Facebook is used for interaction between marketers and consumers.	3.59	.62	1.20	Highly used	NS
Marketers use WhatsApp to inform consumers about a product.	3.75	.67	.94	Highly used	NS
Marketers use Pinterest for consumers.	1.00	.00	.00	Slightly used	S
Marketers use Google to communicate with their consumers.	1.48	-1.37	-1.37	Slightly used	S
Myspace is used by the marketers for awareness creation.	1.34	1.07	1.07	Slightly used	NS
Twitter is a platform used by marketers for consumers.	1.37	1.04	1.04	Slightly used	NS
Tumblr is use by marketers to communicate with their consumers.	1.18	.68	.68	Slightly used	NS
Instagram is a platform used by marketers.	1.83	1.10	1.10	Slightly used	NS
LinkedIn is used to call consumers attention.	1.74	1.15	1.15	Slightly used	NS
Cluster mean	1.76	0.55	.46		

S; significant, NS; Not significant.

Discussion

Today, social networking services are being used more widely in all industries throughout the world. This study identified various social media platforms through which online marketers of green household products can inform consumers about the products. As the use of technology is fast evolving around the world, most consumers especially the young ones

prefer shopping online. This happens because, social media platforms allow consumers to gather and obtain information from various groups of people, including marketers and producers. Findings from the study revealed that both male and female marketer respondents indicated that majority of the social media platforms such as Instagram, WhatsApp, Facebook, Google, Myspace, LinkedIn,

YouTube, Pinterest, Skype, Squarespace, and Twitter are used for consumer information on green household products. The finding is expected because such social media are commonly used by young people for interaction with their peers. Those media are also easily operated with mobile phones, hence young people and families are more likely to source for products via those platforms.

The findings of this study are similar to that of Cheng and Qasim (2021) who found that there has been tremendous growth in the use of social media platforms such as WhatsApp, Instagram, and Facebook over the past decade in green products marketing. According to a study conducted by Edison (2016), a fifth of online social network users tracks their preferred products, businesses, and services on these platforms, with 80 percent of them using Facebook and brand accounts. The findings are in line with the submission of Alison (2012) that social networking sites like Facebook, Myspace, YouTube, Twitter, and Blog create advertising opportunities for businesses of all sizes to reach prospects and customers in a competitive landscape. Al Amin et al., (2020) also found out that online social networks like Facebook are flexible and based on various social interests. Chiang, et al., (2019) conducted a study and found out that social media platforms like Facebook, Instagram, etc., have become a well-known communication and interaction channel among people worldwide. The study conducted by Sanchez-Casado et al., (2018) shows that Facebook is flexible due to comments, likes, and overall view of information; Consumers believed Facebook was easy

to use and can save time; it is fast, convenient, and shared among most people. The user interface (design) of Facebook for all the different pages is the same; therefore, it is understandable, clear, and simple to use.

The findings also revealed that Facebook and WhatsApp were highly used while Skype, YouTube, Squarespace, Pinterest, Google, Myspace, Twitter, Tumblr, Instagram and LinkedIn were slightly used to enhance consumer awareness and for patronising green household products. This implies that marketers/retailers are yet to take advantages of emerging technologies embedded in variety of social media platforms to create awareness on green product consumption and environmental sustainability. Chen and Bryer (2012) found out that despite the proliferation of social media sites, a low percentage of retailers use them in selling their products. The findings are similar to the findings of Egbe (2015) who found out that some organisations still refrain from using social media as official means of networking with their customers because of some perceived negative effects. Social media platforms facilitate people to share ideas, or thought, express their feeling and opinions with other people. It is therefore necessary for retailers to highly utilise variety of media platforms to get information across to their target consumers. Ebrahim (2020) and Budiman, (2021) revealed that marketers consider social media platforms as vital tools for succeeding in the online marketplace. Using social media for consumer information requires knowledge and a lot of

patience, because social media, of course has its challenges and risk before achieving success that is worth to mention.

Conclusion

The economy is rapidly growing, and everything is almost on the verge of digitalisation. As a result, the environment is faced with many challenges such as pollution, global warming, and depletion of natural resources. These problems directly affect the sustainability of economic development, the environment and society. Green product marketers are making use of many of the social media platform for selling their products, however, there is still more room for expanded use. Many consumers are not yet aware of the emergence of green products; therefore, product marketers especially student marketers, must seize every available platform to inform people of the existence of green household products, their benefits, and how the products will help mitigate the challenges faced in our environment.

Recommendations

Based on the findings and the conclusions drawn from the study, the following recommendations are made:

1. Considering the rate of unemployment in the Nigerian labour market, undergraduates studying Business Administration and Marketing on graduation should consider establishing online businesses to earn a living, through which they can effectively use the available social media platforms to market green household products for environmental sustainability.

2. Due to digitalization, the number of social media platforms and active users are rapidly increasing; therefore, marketers are encouraged to use diverse social media platforms to inform consumers of the benefits of consuming green products.
3. Our environment is gradually deteriorating consumers are therefore encouraged to consider green products during purchase as this will help conserve our natural resources.
4. Regular seminars aimed at creating awareness on the need to patronize green household products should be organised in Enugu state. This will enable the producers and marketers of green household products create awareness on consumption of green products for sustainability.
5. There should be social media accounts or blogs for official business posts, regular consumer networking, use of special brand name for consumers' patronage, irresistible offers with good customers' engagement for enquiries and quick response.

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Relationship between Learning Style and Academic Performance of Senior Secondary School Students in Igbo-Etiti Local Government Area, Enugu State

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Abstract

The study determined the relationship between learning style and academic performance of secondary school students in Igbo-Etiti local government area. Descriptive survey research design was used. The study population was 2,905 senior secondary class two students in Igbo-Etiti LGA. Sample size of 229 respondents was selected using simple random sampling technique. Barsch's learning style inventory was adapted and used as instrument for data collection. Findings showed that more than half of the respondents were aged above 15 years (57.20%), 57.2% were females while (42.8%) of them were males. Data shows that up to 75.1% of the respondents prefer kinesthetic learning style, (12.7%) prefer auditory learning style while (12.2%) prefer visual learning style. For English language, (50.7%) of the respondents had high performance, 29.30% had very high performance and 20.10% had average performance. For mathematics, 56.30% of the students had high performance, 11.40% had very high performance, 30.60% had average performance and 1.70% had poor performance. At $p > 0.05$ level of significance, no significant relationship existed between the learning style preferences of the respondents and their performance in English language and Mathematics. Based on findings, it was recommended that students should be made aware of their learning style preferences so they can better understand themselves. The teachers should also tailor their instruction to fit the learning styles of students, that is, the teacher should make use of instructional materials that will appeal to different senses.

Keywords: Learning style, Academic performance, Adolescents, Enugu State.

Introduction

Academic performance has, for the past decades, been the center of interest in educational research. Academic performance refers to the achievement of students in a school subject as designated by a score or mark obtained

in a test or examination (Olaitan et al., 2002). In other words, academic performance is always denoted by score which represent the amount of learning acquired, knowledge gained or skills and competencies developed in the school subject (Onuigbo, 2012). It is

usually measured by standardized and proficient tests and examinations developed for school subjects; and numbers (in the context of grading) are used to indicate whether a student has been successful or unsuccessful in mastering academic content and skills (Nzesei, 2015). The academic performances of students in Nigeria have over the years been reported to be on the decline. In a research carried out by Nuthana and Yenagi (2009) the causes of poor academic performance among Nigerian students identified factors such as low students' intellectual ability, lack of goals, low self-esteem, state of health, motivation, anxiety and state of mind, un-conducive environment for studying, unavailability of textbooks and well-equipped libraries, low socio-economic status of the family and poor study habit as major factors of poor academic performance.

A survey carried out in some selected schools in Nigeria by Ajani and Akinyele (2015) identified inadequate teachers, problem of inadequate facilities in the school, problems caused by poor parental background, unfavorable government policies and low educational sector funding as some major causes of low academic performances in students. A number of learning-related concepts, such as teaching methods and instructional activities have been a focus of attention when attempting to identify factors affecting students' academic performance. Compared to the extensive work done on these areas, one vital area often neglected is the exploration of students' learning style.

Learning style has been defined as the characteristics, strengths and

preferences in the way students receive and process information. It refers to the fact that every person has his or her own method or set of strategies when learning (Gokalp, 2013). Both logic and published research suggest that students taught in a manner matched to their learning style preferences tend to learn more than students taught in a highly mismatched manner (Lin & Fawzi, 2011). Additionally, a compatible learning style with the teaching method of a course instructor enables the students to retain the information much longer and apply it more effectively. In other words, since there are individual differences in learning style, adapting academic materials to these differences will facilitate learning and thus help increase learning benefits, especially for low and moderate achieving students (Damayandi, et al., 2011). Researches by educational psychologists have revealed many learning style models/theories from which different types of learning style were identified. However, this paper is anchored on Neil Fleming's learning style model (NFM). The Neil Fleming's Model identified visual, auditory and kinesthetic styles. Visual learners are learners who prefer to learn using sense of sight. Auditory Learners are learners who prefer instructions that deal with sense organ of hearing. Kinesthetic learners learn by being involved in the activities of the learning process (Nja et al., 2019).

Graf, et al. (2010), reported that students' learning outcome could be improved if proper learning style dimensions could be taken into consideration when developing any learning or instructional process. There is a strong intuitive appeal in the idea that instructors, course designers and

educational psychologists should pay closer attention to students' learning styles - by diagnosing them, by encouraging learners to reflect on them and by designing teaching and learning interventions around them (Nzesei, 2015). When this is done, students would understand their strengths and weaknesses and consequently learn more effectively and take responsibility for their own learning. In turn, teachers would be able to consider appropriate teaching strategies to enhance students' learning strengths (Rogers, 2009). Acquainting students with their learning styles can enhance their awareness of some of their natural learning strengths, and it can also alert them to learning needs which, if unaddressed, could create academic difficulties for them (Lin & Fawzi, 2011). Therefore understanding students' learning styles and their impact on their academic performance is important for it is the first step in ensuring good and satisfactory students' achievement.

There have been many attempts to address the problem of low academic performance of students and some factors have been identified among which are teaching methods, intelligence, test anxiety, cultural and socio-economic background, organization, opportunity, emotional intelligence, determination, personality, attention, memory, reasoning, learning styles and motivation. The poor academic performance of students has contributed to the tremendous and rapid decline in standard and quality of education in Nigeria over the years from the primary up to the tertiary level (Arong & Ogbadu, 2010). A Study conducted in Osun state, Nigeria showed that among the 21 schools

sampled for senior school examination results, only three schools were able to produce potential candidates for higher education admittance with percentages 48%, 40% and 50% (Akinsolu, 2010). In addition, the products of primary schools have been discovered to be unable to write their own names, just as products of secondary schools are unable to copy down notes on the board with correct spellings. It is equally alarming and unbearable to hear that graduates of our tertiary institutions find it difficult to write standard formal letters for employment (Arong & Ogbadu, 2010). It is evident that learners have not yet learned how to learn or discovered their preferred learning styles for different learning material, content or subject. Also, teachers might not have understood the diversity of their learners in a typical classroom, and they might keep on embracing the same traditional teaching styles in every context (Nzesei, 2015). In consequence, students might become bored and inattentive in class, do poorly on tests, get discouraged about the subject, the curriculum, and themselves, and in some worse cases drop out of school. It is therefore imperative to understand learning style preferences among the learners and how they relate to academic performance so as to develop effective and successful learners and that is the purpose of this study.

Objectives of the study: The broad objective of the study was to determine the relationship between learning style preferences and academic performance of senior secondary school students in Igbo-Etiti local government area, Enugu State. The specific objectives were to:

- 1 identify the learning style preferences of senior secondary school students in Igbo-Etiti L.G.A;
- 2 determine the academic performances of the students; and
- 3 determine the relationship between the learning style preferences and academic performance of the students.

Methodology

Study area: The study was carried out in Igbo-etiti Local Government Area, Enugu State. It is an Igbo speaking area whose indigenes are traditionally farmers, with a reasonable portion being civil servants. The local government is home for numerous primary and secondary educational institutes. According to Obollo zone Post Primary School Management Board - PPSMB (2021), there are 14 secondary schools in Igbo-Etiti L.G.A.

Study design: The study adopted a descriptive survey research design in which information is gathered from a representative of the entire population using questionnaire, interview, and observation (Sileyew, 2019).

Study population: The population for this study comprised of 2,905 senior secondary school students in the 14 secondary schools in Igbo-Etiti L.G.A (PPSMB, 2021).

Sample size selection: Sampling was done in multiple stages. In stage one, fifty percent of the 14 schools in the local government was calculated, giving a total of seven schools that was selected from the list of schools using systematic random sampling. Stage two involved calculating the sample size for the study. The sample size of 229 was calculated using the Yamane (1967) formula below.

$$n = \frac{N}{1 + N(e)^2}$$

Where N = total number of population under study

n= sample size

e= margin error (0.05)

In stage three, proportionate sampling was used to obtain the number of students to be sampled in each of the selected schools. Finally, simple random sampling was used to select the required number of respondents from each school.

Instrument for data collection: A structured questionnaire and a standardized instrument were used for data collection. The structured questionnaire had two sections. Section A contained items on the socio-economic/demographic characteristics of the respondents while section B contained a proforma for collecting students' performance grades on English language and Mathematics. The second instrument was adapted from Barsch's Learning Style Inventory (BLSI) for assessing students' learning styles. The BLSI is a simple and convenient set of 24 questions, that tests for visual, auditory and kinesthetic learning styles. The instrument had 3 point rating scale; 'often preferred' = 3, 'sometimes preferred' = 2 and 'seldom preferred' = 1'. The students were required to select the description/statement that suit them and write the score of their selected items.

Data collection method: Two hundred and twenty-nine (229) copies of the questionnaire were hand distributed to the respondents by the researchers and a research assistant. The contents were explained to the respondents and they

filled the questionnaire on the spot, taking average time of fifteen minutes per respondent. All the copies of the questionnaire were retrieved giving a 100% return on the administered questionnaires.

Data and statistical analysis: The data from the completed questionnaires were coded into Statistical Product and Service Solution (SPSS) version 22.0. Each learning style in the BSLI have eight items on the questionnaire. The respondents' responses for each style were summed up and the style with the highest score was regarded as their preferred learning style. Student's grades in English and Mathematics was collated and categorized as very high performance (A), high performance (B), average performance (P) and low performance (F). Descriptive results were presented in frequencies and

percentages. Chi-square was used to define relationships among variables. Significance was accepted at 95% precision ($P < 0.05$).

Result

Demographic characteristics of the respondents

Table 1 below shows the demographic characteristics of the respondents. More than half of the respondents were aged between 11-15years (42.8%) while 57.2% were aged above 15years. Fifty two percent (52.0%) were female and 42.8% of them were male. Majority (71.2%) of the respondents specialized in the sciences, 27.2% in art and 1.3% in commercial subjects, and a few (17.9%) had parents that are university degree holders.

Table 1: Demographic data of the respondents

Variable	Frequency	Percentage
Age		
11-15	18	42.8
Above 15	131	57.2
Total	229	100
Gender		
Male	110	42.8
Female	119	52.0
Total	229	100
Area of specialization		
Science	163	71.2
Art	63	27.5
Commercial	3	1.3
Total	229	100
Educational qualification of father		
First school leaving certificate	88	38.4
Secondary school certificate	89	38.9
NCE/OND	11	4.3
University degree	41	17.9
Total	229	100

Learning style preferences of the respondents

Figure 1 shows the learning style preferences of the respondents. Data show that a greater proportion (75.1%) of the respondents prefer kinesthetic learning style, 12.7% prefer auditory learning style while 12.2% prefer visual learning style.

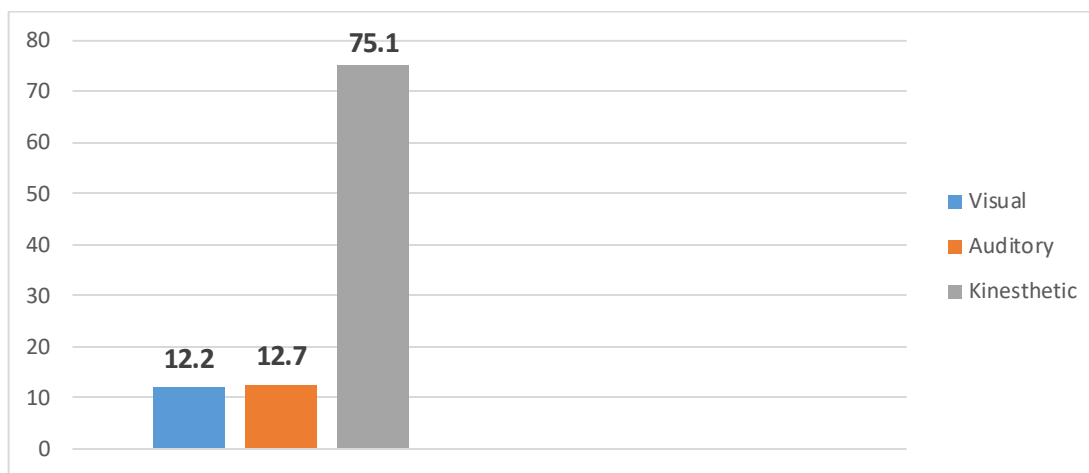


Fig 1: Percentage responses on the learning style preferences of the respondents

Academic performances of the respondents

Table 2 below shows the academic performance of the respondents. For English language, 50.7% had high academic performance, 29.3% performed very highly academically and 20.1% had average academic

performance. For mathematics, 56.3% performed highly academically, 11.4% had very high academic performance, 30.6% had average academic performance and 1.7% performed poorly academically.

Table 2: Academic performance of senior secondary school students

	Very high F (%)	High F (%)	Average F (%)	Poor F (%)	Total F (%)
English Language	67 (29.30)	116 (50.70)	46 (20.10)	0 (0)	229 (100)
Mathematics	26 (11.40)	129 (56.30)	70 (30.60)	4 (1.70)	229 (100)

F = frequency; % = percentage

Table 3 shows the relationship between learning style preferences and academic performance of the respondents. At $p < 0.05$ significance level, there was no significant relationship between the academic performance and learning

style preferences of the students. However, 76.7% of the respondents who preferred kinesthetic learning style had high academic performance in mathematics and 75.9% in English language.

Table 3: Relationship between academic performance and learning styles of the students

Subject	Visual F (%)	Auditory F (%)	Kinesthetic F (%)	Chi-square value
Mathematics				1.81
Very High Performance	4 (15.40)	4 (15.40)	18 (69.20)	
High Performance	14 (10.90)	16 (12.40)	99 (76.70)	
Average	9 (12.90)	9 (12.9)	52 (74.3)	
Poor Performance	1 (0.50)	0 (0.50)	3 (7.50)	
Total	28 (12.20)	29 (12.70)	172 (75.10)	
English Language				1.90
Very High Performance	9 (13.40)	11 (16.40)	47 (70.10)	
High Performance	14 (12.10)	14 (12.10)	88 (75.90)	
Average	5 (10.9)	4 (8.7)	37 (80.4)	
Total	28 (12.2)	29 (12.7)	172 (75.1)	

F = frequency; % = percentage

Discussion

Learning style preferences of the respondents

Proponents of learning-style assessment contend that optimal instruction requires diagnosing individuals' learning style and tailoring instruction accordingly. This is because, the instructional method that proves most effective for students with one learning style is not the most effective method for students with a different learning style (Pashler, et al., 2009). Findings from the study show that a greater proportion of the respondents preferred kinesthetic and auditory learning style while fewer numbers of them preferred visual learning style. Auditory learners have preference for discussion, asking questions, classes and tutorials while kinesthetic learners prefer demonstrations and case studies (Fleming & Bonwell, 2019; Nja et al., 2019) which are the most common methods of instruction in secondary schools according to Porozovs, et al. (2015). This may be why the auditory and kinesthetic learning style were

mostly preferred by the respondents. Visual learning involves use of pictures or graphically based forms of communication in the form of charts, graphs, diagrams, maps and videos (Fleming & Bonwell, 2019; Nja et al., 2019). It is possible that its low preference might be attributed to the gross unavailability of visual instructional materials in Nigerian schools (Ashaver & Igyuve, 2013). However, this finding is in contrast with that of Singh, et al. (2015) which reported that the respondents were mostly visual learners.

Academic performance of the respondents

Academic performance is a measurable and observable behaviour of a student within a specific period (Yusuf et al., 2016). In addition, it consists of scores obtained by a student in an assessment such as class exercise, class test, mid-semester, mock examination, class exam and examination result. This study found that the students generally had

good academic performance based on the English and Mathematic results in the Basic education certificate examination. More than half of the students recorded high performance; denoted by B grade while a good number of them had outstanding performance (A grade) in both subjects. Only very few of them had below average performance. This could be as a result of the learning styles adopted by schools and also the attitude and skillfulness of the teachers while teaching the students. David et al. (2019) opined that teacher experience and professional training have a significant impact on students' performance.

Relationship between learning style preferences and academic performance of the students

The study found that no significant relationship existed between the learning style preferences and academic performance of the respondents. Although all type of learners had high performance, the kinesthetic type of learners had relatively higher performance in both English language and Mathematics than the auditory and visual learners. This finding is expected since practical learning involved in the kinesthetic style makes it easier for students to retain the knowledge they acquired, for a longer period of time than auditory and visual learning. As stated by Cuthbert (2006), understanding the students' learning styles is important for allowing adjustment in the educators' pedagogic approaches.

Conclusion

The respondents mostly preferred kinesthetic learning style followed by auditory learning style and a few of

them preferred visual learning style. Nevertheless, respondents generally recorded high academic performance based on the result of the two core subjects offered at the basic education examination. In addition, kinesthetic learners were found to have higher performance in the two subjects than the auditory and visual learners suggesting that kinesthetic learning style may offer better strategy to retain the knowledge acquired.

Recommendations

The following recommendations have been made based on the findings of the study:

1. Teachers should know the learning style of the students before teaching. He or she can apply the three learning styles used in this study to teach the student for effective understanding.
2. It will help the students to know the causes of their learning problems and make necessary personal adjustments.

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Domestic Violence: A Cog on the Bio-Psycho Social Wheel of Children

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Abstract

Domestic violence includes an entirety of intentional actions or omissions through which physical, psychological, sexual and economic maltreatment is meted out to an individual, by a person which is or have been in a family relationship with the victim. The victims of domestic violence are predominantly women in family relationships but recent studies shows that children are exposed to domestic violence. As many as 275 million children are exposed to domestic violence globally. Children are exposed to domestic violence not only when they are victimised but when they witness the actual abuse, hear the threats or see the aftermath of actual violence or observe the tension in the house. Children have some developmental milestones which they should accomplish at each stage, and exposure to domestic violence robs the child of the ability to accomplish these normal developmental milestones at appropriate time. Exposure to domestic violence in childhood has been linked to adverse outcomes, including difficulties in cognition, low self-esteem, social withdrawal, anxiety; aggression, and delinquency, including continuing the abusive cycle. These negatively affect the physical, social and psychological development of the child. There is therefore a need for urgent and serious interventions, if the society intends to give billions of children worldwide a future devoid of chaos, anarchy and doom.

Keywords: Domestic violence, bio-psycho social wheel, children, Cog, family development

Introduction

Across the globe, an estimated 1 billion children aged 2-17 years, have experienced domestic violence in the past year, in the form of physical, sexual or emotional violence or neglect (Hills, et al., 2016; WHO, 2022). The silence around the reporting of domestic violence mask the real figure, therefore it is believed that millions more are being exposed across the

globe. In 2009, in the Philippines, it was estimated that as many as 7 to 14 million children were exposed to domestic violence and about 3.3 million children exposed to domestic violence in their homes (Eldest, et al., 2010). UNICEF (2020) reported that 1 in 3 children under age five live with a mother who is a victim of intimate partner violence. The children of these women often witness the domestic

violence. Domestic Violence Roundtable Organization (2017) asserted that witnessing domestic violence in a home where one of the parents is abusing the other parent plays a tremendous role on the well-being and the development of children witnessing the violence.

Research on children who witness family violence is a special case of counting the hard-to-count and measuring the hard-to-measure (Fantuzzo, et al., 1999; WHO, 2020), so it is impossible to be definitive about the number of families affected. However, several studies have found that in 85-90% of the time when a violent incident took place in a domestic situation, children were present and children were also abused during the violent incidents in about 50% of those cases (Khemthong & Chutipongdech, 2021). One woman in three has been abused during her pregnancy (Roman-Galvez, et al., 2021) and this has grave consequence for the growing fetus.

Numerous studies have demonstrated that children exposed to domestic violence and/or child abuse are more likely to experience a wide range of adverse psychosocial and behavioral outcomes (WHO, 2020; Herrenkohl, et al., 2008; UNICEF, 2020). Up to 90% of children who have been abused will develop mental health issues by the time they are 18 (NSPCC, 2017, WHO, 2021). Exposure to domestic violence in childhood has been linked to a set of outcomes, including low self-esteem, social withdrawal, depression, and anxiety (Edleson, 1999; Fantuzzo, et al., 1997; Hughes, 1988) aggression, violence, and delinquency, including continuing the

cycle of abuse. Studies from various countries support the findings that rates of abuse are higher among women whose husbands were abused as children or who saw their mothers being abused (UNICEF, 2010, WHO, 2020).

The biological, psychological and social development of children is influenced by the nature/nurture controversy and the experience of domestic violence contributes significantly to the development of negative milestones in children. McLeod (2018) hypothesised that genetics as well as environmental factors have effect on human behaviour. The developmental wheel of children needs to be oiled at all times if the society desire a future devoid of pains, aggression and state of anarchy for our children. This paper therefore discusses the bio-psychosocial effect of domestic violence on the development of children.

Concept of Domestic Violence

Domestic violence has neither any precise definition nor universally accepted definitions. In-fact, its definition changes from country to country and across regions (Sunitha, 2016). In some countries and region, domestic violence is seen as justified particularly in actual or suspected cases of infidelity on the part of the women. Evidence suggests a direct and significant correlation between a country level of gender inequality and actual rate of domestic violent (Esquivel, et al., 2013). However, there is usually an underlining issue in domestic violence- the perpetrator is usually a family member or someone who has lived with the victim in a

marriage relationship or among partners who are cohabiting (Kumar, 2010). It is an incident or pattern of incident of controlling, coercive, threatening, degrading and violent behaviour; including an entirety of wilful actions or omissions through which is exercised physical, psychological, sexual and economic maltreatment, by a person which is or have been in a family relationship with the victim (Women Aids, 2015; Robert et al., 2015).

Consequently, domestic violence includes every behaviour that frightens, manipulates, humiliates, isolates, fears, terrorizes, threatens, damages, hurts or injures the other person in which the perpetrator is or have been a family member. According to Arizona Coalition to End Sexual and Domestic Violence (2017), domestic violence is any behaviour the intention of which is gaining power and control over a partner or intimate family member. Abuse is a learned behaviour and not necessarily orchestrated by anger, mental problems, drugs, alcohol or other excuses. Contrary to held belief on the cause of abuse, in domestic violence, abuse is not due to abuser's loss of control over his behaviour or anger but a deliberate choice made by the abuser (Cross government, 2017; Arizona Coalition to End Sexual and Domestic Violence, 2017). In majority of cases, the abuser is not violent with other people such as his boss, he is able to stop and comport himself before other people and is selective of whom to attack.

The menace of domestic violence on family can only be imagined. The abuser, the abused and other family members, may experience psychological problems, physical disability, social

isolation, limited finances and poor ability to create a healthy family relationship. The effects of domestic violence on children who live in a household of abuse/violence are remarkably deleterious, children often show psychological problems from an early age such as deregulated aggression which may later contribute to continuing the legacy of abuse in adulthood (Alabama Coalition Against Violence, 2010). As such intergenerational cycle of abuse may exist if the society condones the abuse.

Concept of human development

Many theorists conceptualised theories of human development to explain milestones in the physical, cognitive, personality and social domains. Other theories on child development classified developmental patterns of children and measured certain abilities for each developmental milestone. Physical development emphasizes how brain, nervous system, muscle, sensory capabilities, needs for food, drink and sleep affect behaviour. Personality and social development emphasize the enduring characteristics that differentiate one person from another and how social relationships grow and change over time.

Biologically, man develops from the germ cell of the primordial follicles resulting from the fertilization of an oocyte with a spermatozoon. There is imprinting of genetic material, subsequent cell division, growth and development resulting in the birth of a full term baby after 9 months. Prenatally, cognitive, social and personality developments occur and intelligence is partly determined (Wede, 2021). Genetically determined

personality traits are also present; as such foetus in-utero can perceive emotion, touch and movements of the mother. The foetus assimilates the environmental stimuli through the process of perception. *Perception* is the psychological process by which the human brain processes the sensory data collected by the sensory organs. This ability is necessary for infants to learn about events and objects. Prenatal environment that is characterised by violence, alcohol or drug use in the mother could result in some psychological disorders and impaired cognitive functions of the child in later life (Vameghi et al, 2016). A child who experiences psychological problem at an early stage of life is most likely to experience problem with accomplishing tasks in each development milestone which ultimately may initiate some problems in adulthood.

The Menace of Domestic Violence on Child's Bio-Pscho Social Development

Children who live in homes where there is domestic violence grow up in an environment that is unpredictable, filled with tension and anxiety and dominated by fear. This can lead to significant emotional and psychological trauma, similar to that experienced by children who are victims of child abuse. Studies posit that the effect of domestic violence during pregnancy is felt by the fetus (Doi et al., 2022; Shah & Shah, 2010). The internal and external environment of the child during the developmental stages, affect their health in-utero, in childhood as well as in adulthood (Doi, et al., 2022). Adverse prenatal environment may result in low infant birth weights, premature birth

and fetal death, due to the mother's physical trauma and/or emotional stress (Shah & Shah, 2010). Increased maternal stress during the times of violence, especially when combined with smoking and drug abuse, can also lead to premature deliveries and low weight babies (Homer, 2005, Capara et al., 2020).

Infants present in the home during domestic violence episodes often fall victim and "caught in the crossfire." They may suffer unintentional physical trauma as their parent is being battered. Infants may be inconsolable and irritable, have a lack of responsiveness secondary to lacking the emotional and physical attachment to their mother, suffer from developmental delays, and have excessive diarrhoea from both trauma and stress (Vameghi, et al., 2016). Infants are most affected by the environment of abuse because the child's brain is yet to be fully developed. Erickson's Psychosocial Stage 1- Trust versus Mistrust provides that during the years of early infancy, the child must develop a sense of trust for their caregiver. The experience of trauma; specifically domestic violence during this beginning stage, can lead to inadequate emotional development, causing this child to remain at this stage instead of passing through to the appropriate subsequent stages. If this trust is not gained at an early age, the child will grow up anticipating that the world will reflect danger and volatility and that people are not to be trusted (McCluskey, 2010). Battered women have problems with attachment in their personal relationship, a lack of trust, a lack of ability to soothe their child or to be soothed by another person, difficulty sleeping, self-harm, and a lack of

empathy or over-involvement in the distress of others (Lowell et al., 2014).

Middle aged children who witness domestic violence in the home can suffer an immense amount of physical, emotional, and behavioural effect. These children may complain of general aches and pain, such as headaches and stomach aches. They may also have irritable and irregular bowel habits, cold sores, and they may have problems with bed-wetting (WHO, 2020). These complaints have been associated with depressive disorders in children, a common emotional effect of domestic violence. Along with these general complaints of not feeling well, they may always appear nervous, and have short attention spans. Children may show symptoms of fatigue and constant tiredness may fall asleep in school due to the lack of sleep at home or disinterestedness. Children of domestic violence victims are frequently ill, and suffer from poor personal hygiene with tendency to partake in high risk play activities, self-abuse, and suicide as an escape to the problem (Alabama Coalition against Domestic Violence, 2010).

Adolescents are also exposed to physical symptoms, emotional and behavioural issues. They may feel shame, anger and desire for retaliation. They are in jeopardy of academic failure, school drop-out, and substance abuse. Their behaviour is often guarded and secretive about their family members and they may become embarrassed about their home situation. In a meta-analysis of studies that examined the relationship between domestic violence exposure in childhood and adolescent internalizing and externalizing behaviours.

Adolescents feel the insecurity in the house and generally do not invite friends over and tend to spend their free time away from home. Denial and aggression are their major forms of problem solving. Teens cope with domestic violence by blaming others, encountering violence in a relationship, or by running away from home. An estimated one fifth to one third of teenagers subjected to viewing domestic violent situations experience teen dating violence, regularly abusing or being abused by their partners verbally, mentally, emotionally, sexually and/or physically. 30 to 50% of dating relationships can exhibit the same cycle of escalating violence in their marital relationships (UNICEF, 2019).

Generally irrespective of age, it is common for children of victims to feel self-blame, helpless, grief for loss of family cohesion or in some circumstances the child may be ambivalent. Fear, dread, terror, worry and sadness are common. In a study, 60% of children witnessing domestic violence feel they are to be blamed, 52% have behavioural problem (CAADA, 2014). When the unfortunate violent situation is at its peak and a child tries to intervene, logically one would have thought that in order to save the child from harm, parents would control themselves, however statistics show otherwise. It is said that about 50% of the abusers also end up abusing their children. Another alarming statistic is that 25% of the victims of the abusive relationship also tend to get violent with their children (UNICEF, 2019). The violence imposed on these innocent children can in some cases be life-threatening. If a mother is pregnant during the abuse, the unborn child is at

risk of lifelong impairments or at risk of life itself. Researchers reported that mothers who experience domestic violence had more than double the risk of child mortality (Doi et al, 2022, WHO, 2020).

There is substantial evidence indicating that children who witness domestic violence (DV) have psychosocial maladaptation that is associated with demonstrable changes in the anatomic and physiological make up of their central nervous system. Individuals with these changes do not function well in society and present communities with serious medical, sociological, and economic dilemmas (Doi et al., 2022). Children exposed to violence in their home often have conflicting feelings towards their parents; For instance, distrust and affection often coexist for the abuser. The child becomes overprotective of the victim and feels sorry for them. They often develop anxiety, fearing that they may be injured or abandoned, that the child's parent being abused will be injured, or that they are to blame for the violence that is occurring in their homes (UNICEF, 2019).

It is very common for abusers to see one or some children of the abused as a replica of their victim and therefore abuses same, with the intention of hurting the victim through acts of punishment not measurable with the child's offences. Some children act out through anger and aggression even in situations that do not call for it (UNICEF, 2019). Physical aggression can also manifest towards the victim from the children as the victim does not have the ability to develop authority and control over them.

Depression is also a common problem for children who experience domestic violence. The child often feels helpless and powerless. More girls internalize their emotions and show signs of depression than boys, while boys are more likely to act out with aggression and hostility (Moyan et al., 2010). Witnessing violence in the home can give the child the idea that nothing is safe in the world and that they are not worth being kept safe which contributes to their feelings of low self-worth and depression. Symptoms include isolation from friends and relatives in an effort to stay close to siblings and victimized parent (Brady et al, 2005). The adolescent may display or join a gang or become involved in dating relationships that mimic the learned behaviour.

Socially, there is sometimes role reversal between the child and the parent where the responsibilities of the victim, who is emotionally and psychologically dysfunctional, are transferred to the child (Pantazi, 2019). In this situation, the parents treat their child as a therapist or confidant, and not as their child. They are forced to mature faster than the average child. They take on household responsibilities such as cooking, cleaning, and caring for younger children. The responsibilities are usually far beyond normal assigned chores, and are not age appropriate. The child becomes socially isolated and unable to participate in activities that are normal for a child their age. The prettified child is at risk of becoming involved in rocky relationships because they have been isolated and are not experienced at forming successful relationships. Also they tend to become perfectionists because they are forced to

live up to such high expectations for their parents (WHO, 2020).

In general, children exposed to domestic violence frequently do not have the foundation of safety and security that is normally provided by the family (UNICEF, 2019). The children experience desensitization to aggressive behaviour, poor anger management, poor problem solving skills, and learn to engage in exploitative relationships.

Efforts Made to Curb Domestic Violence: Several efforts had been made in the past to curb the menace of domestic Violence in the traditional African setting, by non-governmental organisations, and the legislative arm of government.

Cultural provision

Culturally, among certain communities in Igbo land, during the traditional marriage ceremony the groom is made to pay a certain amount known as “ego otiti” in addition to bride price. The “ego otiti” signifies zero tolerance to domestic violence and sends a message across to the groom and family to handle the bride with care. During the traditional marriage rite, an elder is designated to educate the groom and family on the significance of “Ego otiti”. Following good understanding, the groom pays the designated amount before the bride is handed over to the groom’s family. Payment of the sum denotes an agreement between the families that the new couple was never to settle matters between them with the fist. The said sum is usually set aside for special purposes especially reported cases of domestic abuse. The said sum is used to buy intoxicating drinks for young men, as well as to transport them

to the groom’s house to manhandle him if he resorts to violence on their daughter and sister. This payment is still practiced till date among the Nri people. However the silence surrounding domestic violence, urbanization and religion has grossly affected implementation.

Efforts by Government, Non-Governmental Organizations and international Agencies

Several agencies have also raised their voices against the abuse of women and children and all forms of domestic violence. While some are offering counselling to the victims, others are providing shelters for the abused, legal services and legislations. For example, the Lagos State house of assembly in 2017 passed a law “Protection Against Domestic Violence Law of Lagos State” (Akintola, 2010). Others agencies advocating against domestic violence in Nigeria include the Cleen Foundation located in Abuja with branches in Edo, Lagos and Ibadan; ACTS Generation, CIDDORC in South Eastern Region, BAOBAB for women’s human rights in Lagos and the Rayuwu sexual assault referral centre in North-central Nigeria.

Many international organisations are partnering with the government, businesses and civil society organizations to respond and prevent domestic violence against women and children. Notable among them is United Nations International Children Emergency Fund (UNICEF) with presence in many countries across the globe. These agencies provide nurturing environment, the space and respect for child victims to progress at their own pace, provide reassurance and increased senses of security by providing

explanations and comfort for the things that worry the children, like loud noises (UNICEF, 2009). They also help victims develop and maintain positive contact with significant others such as distant family members because in majority of cases, children whose mother are being abused are denied access to relatives, made to take oaths of secrecy and encouraged to swallow bitter pills of lies by parents (UNICEF, 2009). Despite these efforts, domestic violence is still crowded with secrecy, masked by culture and religion thereby posing lots of challenges in the reporting and prosecuting of offenders.

Conclusion

Domestic violence is a canker worm that is eating deep into the fabric of the society. The effect on children is quite devastating not just during and after the violence but can lead to lifelong disability in children which progresses into adulthood. If domestic violence is not treated with utmost sense of responsibility and urgency, the society might be creating a monster that will unleash terror on the society in the nearest future. The society is currently battling with issues of terrorism and other violent crime, and there is every need to ensure that child victims of domestic violence are well assisted and cared for, to ensure recovery and prevent the physical, social and psychological consequences on their physical, social and psychological development.

Recommendations

1. I recommend that children who are exposed to abuse should be assisted with the optimal intervention that will

help them move on in life without disabilities.

2. There is need to promulgate law with serious consequences for the perpetrators of domestic violence so that it will deter them from such act.
3. Cultures that militate against domestic violence should be encouraged and supported by law since the eroding of cultural values contributed significantly to the recent perceived power tussle resulting in violence.
4. Individuals, family and organizations including non-governmental organizations and agencies should devote more effort to reporting domestic violence and prosecuting offenders so that the real nature of the menace is brought to the full glare of the public.
5. Efforts should be made to desensitise the young victims and also to teach the children that violence is not the means to settling scores but rather a weakness with utmost consequences.

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Quantitative and Qualitative Analysis of Phytochemicals in Selected Traditional Soups Commonly Consumed in Rural and Urban Communities of Enugu State, Nigeria

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Abstract

This study was conducted on the quantitative and qualitative analysis of phytochemicals in traditional soups ("egusi" soup, vegetable soup and "uchakiri" soup) commonly consumed in rural and urban communities in Enugu state. Recipes of the dishes were collected from two urban (Nsukka, and Ehamufu) and rural (Obukpa and Neke) communities in Enugu State using Focus Group Discussion (FGD). These recipes were used to prepare the dishes which were homogenized and screened for alkaloids, tannin, saponin, steroids, terpenoids, glycoside, flavonoid, carotenoid and phenol. The phytochemicals present were also quantified. Phytates and oxalates were directly quantified (not screened). The statistical package for service solution (SPSS) version 22 was used to analyse the data obtained. Alkaloid was the only phytochemical found to be present in appreciable amount (+++) in the soup samples with an exception in "uchakiri" soup where it was minimal presence (+). Phenol was present in minimal amount (+) in all the samples while terpenoids, glycoside and saponin were not detected in vegetable and "uchakiri" soups. Flavonoid concentration ranged from 1.39 to 4.00% being lowest in "egusi" soup and the highest in vegetable soup. "Egusi" soup had the highest saponin and steroid values (9.57 and 5.38% respectively). Terpenoids, glycoside, tannin, flavonoid and steroid and saponin were not detected in "uchakiri" soup. Traditional soups consumed in Enugu state were found to contain a variety of phytochemicals which can improve the health status of the consumers.

Key words: Vegetable Soup, Traditional Soup, Phytochemicals, Commonly Consumed, "Egusi" Soup, "Uchakiri" Soup, Traditional Food.

Introduction

Commonly consumed foods in an area are those foods that have high consumption frequencies of at least three times a week (Ayogu et al., 2017). Most of these foods are mainly plant-based which usually serve as the main meal of the people. Although animal-based proteins such as meat, contribute more protein and several nutrients such

as zinc, vitamin B12, phosphorous, and iron, plant-based protein foods, these can make an appreciable contribution to intakes of magnesium, vitamin E, beta-carotene and phytochemicals (Phillips et al., 2015). Food consumption varies from household to household, however, a food consumption survey usually demonstrate the same trend of food consumed in variant frequencies.

People tend to consume what is available, affordable and have ease of preparation. The population groups of any area always depend on such foods as their main meal and most often these foods are of traditional origin (Ayogu *et al.*, 2017).

Traditional foods are considered to be those that have been handed down from one generation to the next in terms of knowledge, techniques or practices used in their preparation or in the choice and use of the raw material, which is generally local, as well as the culture that produces it (Rocillo-Aquino *et al.*, 2021). They are foods strongly linked to a territory, a historical depth and a constellation of associated knowledge, meanings, values and practices. These foods can be indigenous or introduced from ancient times, but dynamically integrated into the local agricultural system and regional food culture; this implies accepting and understanding their variability and particularity within a given historical context and process. The interest in traditional foods has always existed since they are the basis of nutrition in diverse cultures and societies (Rocillo-Aquino *et al.*, 2021). A typical Nigerian diet is comprised of carbohydrate-based meal (cassava four, rice, cocoyam, potatoes, yam or plantain) consumed with soup or stew cooked with palm oil, pepper, vegetable and little protein source (Oboh & Olumese, 2010).

Soup is the food made by boiling solid ingredients in liquid until the flavours are extracted, forming a broth (Ayogu *et al.*, 2017). Soup is a liquid or semi-liquid mixture of vegetables and non-vegetable items such as meat, seafood, poultry, and herbs and spices.

Although soup is a flavorful and nutritious liquid food usually served at the beginning of a meal or a snack (De Ancos & Sánchez-Moreno, 2017). It offers a sustainable means to mix several food ingredients into one wholesome meal, thereby contributing to dietary diversity, a unique flavour, taste and aroma (Maseko, 2018). According to Kristbergsson and Oliveria (2016), traditional soups are passed through generations with specific traditional ingredients (raw material of primary products) or traditional composition and preparation methods. It is prepared with traditional ingredients which are characterized by their availability, affordability and acceptability, and these soups tend to be commonly consumed within their specific culture. The consumption of more traditional foods signifies higher intakes of several important nutrients and higher overall diet quality which includes fewer calories, more calcium and iron, which has led to a considerable reduction in the risk of heart disease, high blood pressure, osteoporosis, reduces inflammatory activities in the immune system, protects the body from damaging cell distortions, keeps eyesight healthy and the body cells communicating. However, these qualities have been attributed to the phytochemicals present in foods (Wright, 2017; Kuhnlenin & Humphries, 2017; Kristbergsson & Oliveria, 2016).

Phytochemicals are chemical compounds produced by plants (Group, 2014). They are commonly found in fruits, vegetables, nuts, legumes and grains. Phytochemicals are frequently confused with phytonutrients (Group, 2014). Whereas phytochemicals include

beneficial compounds as well as those that are detrimental, phytonutrients specifically refer to compounds that have effects. In other words, all phytonutrients are phytochemicals but not all phytochemicals are phytonutrients (Rock *et al.*, 2014). Phytochemicals are bioactive compounds found in plants that work with nutrients and dietary fibre to protect against diseases. They have been shown to have antioxidant, anti-carcinogenic, anti-microbial, anti-allergic, anti-mutagenic, and anti-inflammatory properties (Madikizela *et al.*, 2017). These phytochemicals are the secondary metabolites present in smaller quantities in higher plants and they include the alkaloids, Steroids, flavonoids, terpenoids, tannins and many others. Many phytochemicals have antioxidant activity and reduce the risk of many diseases. These antioxidants are substances that may protect our body cells against the effects of free radicals. Free radicals are molecules produced when our body breaks down food (Vasanthi *et al.*, 2014). Phytochemicals, also referred to as phytochemicals are found in fruits, vegetables, whole grain, legumes, beans, herbs, spices, nuts and seeds and are classified according to their chemical structures and functional properties. (Murphy *et al.*, 2012). These phytochemicals, which are part of a large and varied group of chemical compounds, are also responsible for the colour, flavour, and odour of plant food, such as blueberries' dark hue, broccoli's bitter taste, and ginger's pungent odour (Slavin & Lloyd, 2012).

Traditional crops which are the chief ingredient for preparing traditional delicacies have been largely ignored by

commercial farming, research, and development, thus becoming less competitive than well-established major crops and losing gradually their diversity and their associated traditional knowledge (Mbhenyane, 2017). Because of the increasing globalization and internationalization of the food market, many traditional foods are at risk of disappearing. The documentation of traditional foods and dishes is essential for sustaining traditional foods, which are an important part of cultural heritage (Glibetic *et al.*, 2018). Infertility, heart diseases, diabetes, autoimmune diseases, mental illnesses, obesity, dental cavities, and other diseases are largely absent in cultures subsisting on a native diet of unrefined foods (McGruther, 2014). Provision of and access to traditional food sources are declining as natural habitats come under increasing pressure from development, conservation exclusion, and agricultural expansion. Despite the value of traditional foods, they are excluded from official statistics on the economic value of natural resources (Mbhenyane, 2017). The lack of data on the phytochemical content of the traditional dishes gives rise to non-communicable chronic diseases associated with the changing diet and lifestyles (Traka & Mithen 2011). Although, many rural communities have access to traditional crops that are rich in micronutrients and phytochemicals, which are likely to serve as a long-term strategy to eliminate food insecurity, nutrition information of the traditional foods is lacking (Mbhenyanne, 2017). This study therefore is aimed at providing empirical nutrition data of traditional

soups with a view to adding to the body of knowledge on the nutritional benefits of local foods.

Objectives of the study: The general objective of the study was qualitative and quantitative evaluation of phytochemicals in traditional soups commonly consumed in Enugu State, Nigeria. Specifically, the study carried out:

1. qualitative analyses of phytochemicals in traditional soups ("Egusi" soup, Vegetable soup and "Uchakiri" soup) commonly consumed in rural and urban community Enugu state.
2. quantitative analyses of phytochemical in the traditional soups ("Egusi" soup, Vegetable soup and "Uchakiri" soup) commonly consumed in rural and urban community of Enugu state.

Materials and methods

Procurement of materials: All the ingredients used in preparing the dishes were purchased from the local market in each of the communities where the recipes were collected.

Soup sample preparation: The traditional soups documented in each community were prepared by women from those communities using the recipes collected from Focus Group Discussion as detailed below. The soup preparation was done in the Diet Therapy Laboratory, Home Science and Management Department, University of Nigeria Nsukka, Enugu State.

Preparation of samples for chemical analysis: After cooking, the soup samples were homogenized, properly packaged, labelled and taken to the Food and Nutrition Laboratory, Department of Home Science and

management, University of Nigeria Nsukka for qualitative and quantitative evaluation of phytochemicals.

Recipe: "Egusi" soup

Ingredients	Quantity
"Egusi" seed (melon seeds)	1 cup
Meat, chicken or fish	675g
Dried crayfish or shrimp	½ wrap
Leafy spinach, bitter leaf or other greens	½ wrap
Palm oil	1 cup
Chili peppers	2-3 tablespoon
Onions (chopped)	1 big bulb
Salt	to taste
Bouillon cubes	4 cubes

Method of Preparation

1. Chop finely and fry the onions, and pepper for 5 minutes in palm oil.
2. Grind or crush the "Egusi" seeds and mix it with enough water to make a paste and add to the above together with shrimp or crayfish.
3. Cut the meat into bite-sized chunks and add 1 cup of water, half teaspoon of salt, onions and bouillon cubes and boil.
4. When the meat gets brownish, add it to the above sauce and cook until tender.
5. Add the bunch of washed bitter leaf (finely chopped) or any other vegetable of choice (washed and chopped) 10 minutes before the end of cooking time.

Recipe name: Vegetable soup

Ingredients	Quantity
"Ugu" (pumpkin leaf)	150g
Green	100g
"Anyara" (garden egg leaf)	100g
Akparata	100g
Crayfish	50g
"Okpei" (locust bean)	25g

Pepper	30g
Salt	to taste
Bouillon cubes	2 cubes

Method of preparation:

1. Bring everything to a boil
2. Dissolve "Akparata "with palm oil and add to boiling water
3. Bring to boil and add the vegetables
4. Cook for few minutes and taste
5. Serve with "Akpu"

Recipe name: "Uchakiri" Soup

Ingredients	Quantity
Dried "uchakiri" leaf	100g
Palm oil	½cup
Crayfish	25g
"Okpei" (locust bean)	10g
Pepper	10g
Salt	to taste
Bouillon cubes	2 cubes

Method of preparation

1. Soak the "uchakiri" leaf in boiled water till soft, drain water and pound.
2. Melt palm oil.
3. Add pepper, "okpei" (locust bean), salt, water, pounded "uchakiri" to the palm oil and mix together.
4. Cook for 2-3 minutes.
5. Serve with boiled yam.

Chemical analysis: Quantitative and qualitative evaluation of phytochemicals in all samples where done in duplicate.

Phytochemical screening: For the presence of an alkaloid, Mayer's test described by Ajuru et al., (2017) was used. Test recommended by Ejikeme et al., (2014) was used to detect the presence of terpenoids. The test solution was shaken with water. Copious lather formation after shaking the test solution

in water indicated the presence of saponin.

For tannin, test solution was mixed with basic lead acetate solution. Formation of white precipitate indicated the presence of tannin. For glycosides test, the extract was boiled with dilute sulphuric acid; chloroform was added and shaken well. The organic layer was separated to which ammonia was added slowly. Presence of glycoside was denoted by pink to red colour. To 2ml of the test solution, a few magnesium turning and a few drops of concentration hydrochloride acid were added and boiled for 5 minutes. Appearance of red or orange colour indicated the presence of flavonoid. To 2ml of the test solution, a few drops of ferric chloride solution were added. Bluish green colour indicated the presence of phenol. To 2ml of the test solution, a few drops of chloroform, 3-4 drops of acetic anhydride and one drop of concentrate sulphuric acid were added. Appearance of purple colour, which changed to blue or green colour, showed the presence of steroid. 1g of each sample was extracted with 10ml of chloroform in a test tube with vigorous shaking. The resulting mixture was filtered and 85% sulphuric acid added, a blue colour at the interface showed the presence of carotenoid.

Quantitative analysis of phytochemicals: Alkaloids content was determined by the alkaline precipitation-gravimetric method described by Harborne (1973). Total oxalate in the sample was assayed using the method of AOAC (1995), while AOAC, (2010) was used for tannin and phytate determination. Saponin was determined according to the Ochuko and Obadni method (2001). Boham and Kocipia-Abyazan method

(1994) was used for flavonoids determination. Method of analysis of Analytical Methods Committee of Royal Society of Chemistry (AMCRS) was used for phenols determination. To determine terpenoid, about 10g of the sample was taken and soaked in alcohol for 24 hours. It was filtered and filtrate extracted with petroleum ether; this ether extract was treated as total terpenoids. Onwuka G. I. (2005) was used to determine glycoside. To determine steroid, 1ml of Methanolic extract steroid solution was transferred into 10ml volumetric flask. Sulphuric acid (4N, 2ml) and iron (III) chloride (0.5% w/v, 2ml), were added, followed by potassium hexacyanoferrate (III) solution (0.5% w/v, 0.5 ml). The mixture was heated in a water-bath maintained at 70±20°C for 30 minutes with occasional shaking and diluted to the mark with dilute water. The absorbance was measured at 780nm against the reagent blank. To determine carotenoid, A measured weight of each sample was homogenized in methanol using a laboratory blender. A 1:10 (1%) mixture was used. The homogenate was filtrate to take up the carotenoid mixed well and then treated with 20ml of distilled water in a separating funnel. The other layer was recovered and evaporated to dryness at low temperature (35-50°C) in a vacuum dessicator. The dry extract was then saponified with 20ml of ethanoic potassium hydroxide and left-over

night in a dark cupboard. The next day, the carotenoid were taken up in 200ml of ether and then washed with two portions 20ml distilled water. The carotenoid extract (ether layer) was dried in a dessicator and then treated with a light petroleum (petroleum spurt) and allowed to stand overnight in a freezer (-10°C). The next day, the precipitate steroid was removed by centrifugation and the carotenoid extract was evaporated to dryness in a weighed evaporation dish, cooled in a dessicator and weighted. The weight of the carotenoid was determined and expressed as a percentage of the sample weight.

Statistical analysis: Data obtained was analyzed statistically using Statistical Package for Service Solution (SPSS), version 22 and presented as Mean ± Standard deviation.

Results

Table 1 shows the qualitative analysis of phytochemicals of the soup samples. Carotenoids were present in appreciable amount (++) while phenol was present in minimal amount (+) in all the soup samples. Glycoside, terpenoid and saponin were not detected (-) in Vegetable and "Uchakiri" soup. All the phytochemicals were found in "Egusi" soup. Alkaloid was present in appreciable amount (+++) in "Egusi" and Vegetable soups.

Table 1: Qualitative analyses of phytochemicals in the traditional soups

Phytochemicals	Soup Sample		
	“Egusi” soup	Vegetable soup	“Uchakiri” soup
Tannin (%)	++	++	-
Phenol (%)	+	+	+
Flavonoid (%)	+	++	++
Saponin (%)	+	-	-
Alkaloid (%)	+++	+++	+
Carotenoid (mg)	++	++	++
Glycoside (mg)	+	-	-
Terpenoid (%)	+	-	-
Steroid (%)	+	+	-

Keys; +++ = present in appreciable amount; ++ = moderately present; + = minimally present; - = not detected.

Table 2 reveals the quantity of phytochemicals in the traditional soups. The highest tannin, flavonoid and alkaloid content (0.34%), (4.00%) and (3.93%) respectively were found in Vegetable soup while Phytate and carotenoid values ranged from 0.03-0.54

and 2.45-6.82mg respectively. Tannin, flavonoid, terpenoid, steroid, saponin and glycoside were not found in “Uchakiri” soup. The highest amount of the phytochemical saponin (9.57%) was found in “Egusi” soup.

Table 2: Phytochemical composition of traditional soups

Phytochemicals	Soup Sample		
	“Egusi” soup	Vegetable soup	“Uchakiri” soup
Tannin (%)	0.24±0.01	0.34±0.00	ND
Oxalate (%)	0.64±0.00	0.18±0.00	0.27±0.01
Phenol (%)	0.30±0.00	1.64±0.00	1.99±0.01
Flavonoid (%)	1.93±0.00	4.00±0.00	ND
Phytate (%)	0.03±0.00	0.54±0.00	0.03±0.00
Saponin (%)	9.57±0.02	ND	ND
Alkaloid (%)	3.85±0.01	3.93±0.01	1.86±0.00
Carotenoid (mg)	4.12±0.07	2.45±0.14	6.84±0.02
Glycoside (mg)	2.33±0.00	ND	ND
Terpenoid (%)	2.97±0.01	ND	ND
Steroid (%)	5.38±0.00	2.16±0.07	ND

Key; ND = not detected.

Discussion

The phytochemical screening of the traditional soup samples obtained in this study revealed that the soups

contain tannin, saponin, carotenoid, flavonoid, saponin and phenol though there were few exceptions. In “Egusi” soup (melon soup), alkaloid was

present in appreciable amount (+++), tannin and carotenoid were present in moderate amount (++) while phenol, steroid, flavonoid, glycoside, terpenoid and saponin were minimally present (+). This result disagrees with the findings of Ebana et al. (2014) which showed that alkaloid, glycoside, saponin, flavonoid and phenol were minimally present (+) while tannin was not detected in cooked melon seeds. The presence of tannin in "Egusi" soup could be due to the fact that the soup contained other ingredients like vegetables. According to Ghosh (2015), tannins are group of phytochemicals found to be present in various concentrations in many fruits and vegetables consumed by human. The reduction in the number of phytochemicals like phenol, glycoside, phytate would have been caused by high heat used in preparing the soup. High heat especially when boiling can lead to a reduction in the amount of phytochemical (Atli, 2017; Shunmugariya & Kalasielvan, 2017; Hotz & Gibson, 2017).

The vegetable soup was prepared using fluted pumpkin leaves (ugu), garden egg leaves (anara), "akparata" (*Afezelia Africana*) as the main ingredients. This study revealed that alkaloid was present in appreciable amount (+++), tannin, carotenoid and flavonoid were present in moderate amount (++) , phenol and steroid were minimally present (+), while glycoside and terpenoid were not detected. Fakoya et al. (2019) recorded that fluted pumpkin leaf (ugu) extract, had saponin, tannin and glycoside were present in moderate amount (++) , while alkaloid, flavonoid and glycoside were not detected. Saponin and tannin were

present in moderate amount (++) , alkaloid, terpenoid and phenol were minimally present (+), while steroid was not detected in garden egg (anara) leaf (Ibrahim et al., 2019). Friday et al., (2018), also reported that tannin, phenol, steroid, flavonoid, terpenoid and saponin were minimally present in "akaprata" (*Afezelia Africana*). The above ingredient contributed to the phytochemicals in the soup. Although some of the findings from the above mentioned researchers of the single ingredient used to prepare the soups correspond with the findings of this work, the increase in the detected phytochemicals in vegetable soup could have resulted from the combination of the different vegetables used in preparing the soup. According to Group, (2014), Phytochemicals are chemical compounds produced by plants that are commonly found in fruits, vegetables, nuts, legumes and grains. The reduction of phytochemical detected of the vegetable soup compare to the phytochemicals detected in the simple soup ingredients could be attributed to the effect of high heat used in preparation of the soup. According to Nandya, et al., (2020), phytochemicals in vegetables are reduced by the application of high heat such as boiling, drying etcetera. The phytochemical screening of the traditional soup samples obtained in this study revealed that the soups contain tannin, saponin, carotenoid, flavonoid, saponin and phenol though there were few exceptions.

"Uchakiri" leaf which is one of the major ingredients for "Uchakiri" soup contains great amount of phytochemicals as observed by Otitoju et al. (2014). However, the result from

the phytochemical screening of "Uchakiri" soup revealed that compared to "Egusi" and vegetable soups, "Uchakiri" soup contained the least of phytochemicals. Carotenoid and flavonoid were present in moderate amount (++), phenol and alkaloid were minimally present (+), while tannin, steroid, glycoside, terpenoid and steroid were not detected. This finding disagrees with the findings of Dawang, (2015), who reported that alkaloid, flavonoid, glycoside, steroid and terpenoid were minimally present (+), while tannin, saponin and phenol were not detected in "uchakiri" leaves. Phytochemicals such as glycoside and flavonoid are reduced by heat during cooking (Parlermo et al., 2014; Islamiyat et al., 2016). This could be the reason why the phytochemicals were not detected in the soup sample but were present in raw "uchakiri" leaves. Ware (2017) also recorded that polyphenols in foods vary depending on where the food is grown, how it is farmed and transported, how ripe it is, and how it is cooked or prepared. All traditional soup samples contained alkaloid which plays an important role in the defense systems against pathogens and animals and possesses antimicrobial and anti-parasitic activities (Bouayad et al., 2011).

In this study, the phytochemical content of "Egusi" (melon) soup varied from what was observed by Okorie (2018) in Abakaliki-indigenous Nigerian melon (isekele) seed flour. This study observed saponin (9.57%) flavonoid (1.93%), carotenoid (4.12mg) and alkaloid (3.85%). while Okorie (2018) detected saponin (6.10%), carotenoid (0.85%), flavonoid (2.90%) and alkaloid (2.90%). This variance could be due to

the location the "egusi" is gotten from, the process and preparation method of the samples. Agronomic practices and climatic factors affect the content and profile of phytochemicals. The effect of the environment such as salinity, climate and other abiotic factors, promotes biochemical responses, including changes in quality and quantity of phytochemicals (Borges et al., 2018 & Okunlola et al., 2017).

Vegetable soup in this work contains tannin (0.034), phenol (1.64%), flavonoid (4.00%) and alkaloid (3.39). The findings by Umeoka (2018) revealed that fluted pumpkin leaf (ugu) extract contains tannin (0.437%), phenol (12.2%), flavonoid (1.50%) and alkaloid (1.35%). While the findings by Ndulaka, et al., (2017), revealed that "akparata" (*Afezelia Africana*) contains tannin (3.55%), phenol (0.78%), flavonoid (1.13%) and alkaloid (1.35%). Also, Eze & Kanu (2014) reported that garden egg (anara) leaf contains tannin (0.14%), phenol (0.24%), flavonoid (0.45%) and alkaloid (0.77%). The reduction in the phytochemical content could be attributed to food preparation or processing method. Certain phytochemicals such as phenol is affected by heat during food preparation/cooking method, fermentation, soaking, roasting, washing, rubbing and other food processing methods reduces flavonoid in food (Nicoletta *et al.*, 2010; Elket & Zannini, 2013; Kumar & Panday, 2013; Scalzo, 2016).

This study revealed that "Uchakiri" soup contained oxalate (0.27%), alkaloid (1.86) and carotenoid (6.8mg). The research by Otutoju et al., (2014), revealed that cooked "Uchakiri" leaf contains oxalate (1.95%), alkaloid

(1.23%) and carotenoid (0.11%). The above report disagreed with the result obtained in this work. The disparity could be due to the cooking method used, the storage and processing method used. Certain process such as conventional cooking methods, storage and processing affects the quantity of phytochemicals present in food (Elkek & Zannini, 2013; Nicoletta et al., 2010; Sabrina & Nissreen, 2011).

Conclusion

The selected traditional soups contain a substantial amount of phytochemicals which are helpful in the prevention of some deadly diseases and these phytochemicals varies between the soups. "Egusi" soup showed the higher presence of all the phytochemicals than vegetable and "Uchakiri" soups. Most of the quantified phytochemicals were seen to be within their tolerable limit except for saponin in "Egusi" soup. Although, the reduction of some phytochemicals might have been caused by heat, the traditional soups have shown to be a good source of phytochemicals. Therefore, their consumption should be encouraged.

Recommendation

Based on the findings of this study, the following recommendations are made:

- Further studies should be conducted on traditional soups consumed in different region and its nutrition data made available.
- Due to the health benefits of phytochemicals, consumption of traditional soups (particularly those that had tolerable limits of phytochemicals) should be encouraged.

- The traditional soups should be made popular across the country; this will help in enriching the Nigerian traditional food habits and improving the health status of the population.

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Challenges of Teaching Children with Opposition Defiant Disorder in Some Primary Schools in Makurdi Benue State

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Abstract

The study investigated the challenges of teaching children with Opposition Defiant Disorder (ODD) in some selected schools in Makurdi metropolis. The study adopted cross-sectional survey research design. All the 41 teachers in the selected primary schools were studied. Data were collected using the Oppositional Defiant Disorder Questionnaire (ODDQ). Hypotheses for the study were tested using the t-test statistics. The study found no significant difference between mean response of male and female teachers on the behaviours that pupils with ODD exhibit during classroom activities. Similarly, no significant difference was found between the mean response of male and female teachers on the challenges of teaching pupils with ODD. Also, the study found no significant difference between mean response of male and female teachers on the management skills that can help the teachers in teaching pupils with ODD without obstruction during class activities. It was concluded that pupils with ODD exhibit similar negative behaviours during classroom activities with mean responses ranging from 3.59 to 4.54. Teaching pupils with ODD leaves the teachers with series of challenges and these can be addressed through the management skills identified. It was recommended that parents, guardians, and family members should increase positive parenting such as providing supportive and consistent supervision and discipline as it can help to reduce inappropriate and disruptive behaviours; and that those teachers should be given more special training through courses and workshops in the area to have enough knowledge about ODD and in areas of effective behaviour management skills and cognitive behavioural interventions.

Key words: Opposition defiant disorder, Challenges, Teaching, Behaviours, Management skills

Introduction

In their academic endeavours, students with behaviour difficulties encounter not only academic challenges, but also

social and psychological challenges. There are number of behaviour problems such as conduct disorder, attention deficit hyperactive disorder

among others, which school children exhibit in the classroom, but this research specifically centered on Oppositional Defiant Disorder (ODD).

Oppositional Defiant Disorder is a form of anger, hot-tempered mood, confrontation or deviant behaviour, or nastiness which last for at least six months as evidenced by at least few symptoms exhibited during interaction with an individual who is not a blood relative (American Psychological Association, 2013). Oppositional Defiant Disorder manifest through loss of temper, disobedience to rules, sluggish, stubbornness, argues extremely, resentful, easily annoyed, ungovernable, unteachable, desire to harm, vindictive and disturbing. Such individuals are often older than five years (Kyevea, Ireri, & Menecha, 2021). It is a childhood behaviour disorder which portrays the child as troublesome, always opposing adults, engages in repeated arguments and exhibit hostile and disruptive behaviour towards peers and adults alike.

There is no clear-cut cause of ODD. However, Urie Bronfenbrenner Ecological Systems Theory in 1977 which focuses on human growth and considers all of the factors that affect it, indicates that the quality and context of people's lives is seen through developmental stages that take place within the context of complex interrelated systems. Bronfenbrenner realized that larger societal issues influence human interaction, and that knowing these influences is crucial for understanding an individual. This may be linked to ODD because the children's interactions with the system in their environment cause them to behave abnormally (Kyevea et al., 2021). ODD is

caused by a lack of consistency between the child and his or her environment, both immediate and extended.

According to Albert Bandura's Social Learning Theory, published in 1977, the majority of learning is achieved through people's perceptions and reflections on their experiences. They learn through imitating the actions of others around them. As a result, youngsters learn by watching and mimicking the actions of others. According to this theory, the negative symptoms of ODD are taught attitudes. They mimic the negative reinforcement strategies utilized by parents and others in positions of control. Negative reinforcement encourages a child's ODD behaviour. This is because these behaviours help the youngster to acquire what he or she wants: parental or other people's attention and reactions. The study was anchored on the social learning theory and ecological systems theory.

Majority of experts believe that a combination of biological, psychological, and social risks factors plays a role in the development of the disorder (Burke, Loeber, & Birmaher, 2002). On the basis of biological variables, children and adolescents are more likely to acquire ODD if they have a parent who has had a history of ADHD, ODD, or conduct disorder (CD); a parent with a mental disorder (such as depression or bipolar disorder); a parent who drinks or uses drugs; a brain chemical imbalance; impairment in the portion of the brain responsible for logic, judgment, and impulse control; a woman who smokes while pregnant; exposure to toxins; poor nutrition (Burke, Loeber, & Birmaher, 2002).

Psychological factors that play a role in the development of ODD include a poor relationship with one or more parent; a neglectful or absent parent; a difficulty or inability to form social relationships or process social cues. Social factors include poverty; a chaotic environment; abuse; neglect; a lack of supervision; un-involved parents; inconsistent discipline; family instability such as divorce (Burke, Loeber, & Birmaher, 2002).

Oppositional Defiant Disorder affects approximately 3.3% of all children and adolescent with a life time prevalence of 12.6%. (American Psychiatric Association, 2013). In addition, issues related to ODD are usually severely impairing and co-occur with ADHD, anxiety disorders, mood related conditions (Martel et al, 2012). ODD-related issues have a significant impact on individuals' everyday functioning, as well as their interactions with peers, family members, and other caregivers, due to their disruptive nature and high comorbidity with other illnesses (Greene et al, 2002).

Externalizing behaviour difficulties and negative emotions are the two key symptom categories now utilized to diagnose ODD (Frick & Nigg, 2012). These symptoms of ODD are listed in the DSM-V that includes; arguing with authority figures or adults; actively defying or refusing to obey rules or requests from authority figures; wilfully annoying others; blaming others for their own mistakes or misbehaviours; prone to being touchy, irritable or easily losing temper; often being resentful, and spiteful or vindictive at least twice within the past six months (American Psychiatric Association, 2013).

For ODD diagnosis to be considered, the presence of four or more symptoms is required for a period of six months. Symptoms must be frequent and persistence that exceed similar behaviours in typical peers i.e., contribute to significant distress and impaired social, educational and occupational functioning. ODD is considered to be the most prevalent childhood psychiatric conditions in need of psychological services (Olfson et al, 2014).

The prevalence of ODD reported in clinical research differs greatly (1 percent to 11 percent). According to data from community sampling, the frequency in some communities could be as high as 15.6 percent (Munkvold et al., 2011). Because of the high rate of referral, studies of outpatient settings find a relatively high proportion of clinical presentations of ODD, ranging from 28 percent to 65 percent (Boylan et al; 2007). Based on age, gender, and contextual circumstances, there are significant variances in the presentation of ODD.

In terms of age, ODD symptoms are most common in preschool and later in adolescence. Oppositional Defiant Disorder is said to be influenced by a child's temperament, despite the fact that there are no established biological or genetic predictors for the disease (Loeber et al: 2009). Gender differences in ODD suggests that boys meet criteria more frequently than girls in the ratio 1.4: 1, in preschool and elementary school years (American Psychiatric Association, 2013). However, gender differences appear to disappear in adolescence and beyond (Munkvold, et al; 2011). Girls, on the other hand, appear to be at a higher risk of

developing depression later in life as a result of ODD (Burke, et al; 2010), boys show a greater tendency in developing conduct disorder (Rowe, et al; 2010)

Environmental factors known to contribute to the emergence of ODD comprise of higher family conflict and parenting stress as well as other socio-economic variables (Lavigne, et al; 2012). According to Lavigne, et al (2012) proof has been shown to date suggest that ODD symptoms are most directly accounted for by families report of parenting stress and poorer family functioning.

These negative behaviours often affect the performance of such children in school. According to Landrum, Tankersley, and Kauffman, (2003) there are many children in school age that suffer from deferent behaviour disorders, which negatively affects their academic achievements, and relationships with their peers, teachers, or parents. Teachers are typically responsible for confronting and correcting these behaviours in the classroom in order to achieve the educational process's goals (Barela, Bernardino, Ana, Feliciano, & Averion, 2018). Teachers' gender roles, on the other hand, may have an impact on how they educate children. In terms of structure and rules, for example, male and female teachers may provide different learning and classroom environments (De Zeeuw *et al*, 2015). Female teachers, according to Abaoud (2016), are more likely than male teachers to implement intervention strategies aimed at improving students' academic achievement, which corresponds to the feminine instinct of care and warmth.

Mishar, Garg, & Desai (2014) in Indore city, asserted that the prevalence of ODD is 7.73% between primary school pupils. In Nigeria, Frank-Briggs and Alikor (2008) reported a prevalence of 15.82%. However, Akpan et al. (2020) found a prevalence of 9.8% among primary school children in Southern Nigeria. It is clear from this statistic that there is high percentage of ODD in primary school, because the effects of this disorder affect the people surrounding the pupils such as peers and teachers in the classroom. Therefore, the impact of this disorder on a pupil leads to academic obstacles. In Skoulos, and Georgiana (2007) study pointed out that, pupils of ODD have social disability, low academic efficiency, and their behavioural disorders are more than pupils without ODD. These pupils with ODD often interrupt their teachers while class is going on, bother their peer during studies, make noise in the classroom, they refuse to answer question asked by the teacher and they do not asked questions in the classroom

According to Boesky (2011), ODD children and teenagers refuse to obey rules or respond to adult commands. Children with ODD exhibit anger towards people for unclear reasons, ignore matters, annoy others, cannot monitor temper, devastate things, and demonstrate little honour for parents and teachers (Barkley & Benton, 2013). In middle elementary school, children with ODD experience not only academic but also social and psychological challenges in their scholastic endeavours.

Students with such behavioural issues make teachers' efforts in the classroom tedious and ineffective

(Jessor, 2013). As it impacts them and other students in the classroom, students with ODD display behaviour that hampers efficient teaching and learning. They find reading, writing, mathematics and concentration difficult. Some may also have language delays and find talking about emotions difficult. Pupils or students with ODD can have trouble communicating, making friends and develop low self-esteem. These behaviours have an impact on both staff and children, and they have the potential to destroy well-established positive classroom settings (Gresham et al; 2002). Infantino and Little (2005) assert that these disruptive behaviours that students with ODD exhibit have direct effects on the student's academic performance and future outcomes. And this can lead to pupils or student acting out, exerting further stress on the teacher. Teachers who work with these pupils face increased stress, which has a direct impact on their mental health (Westling, Herzog, Cooper-Duff, Prohn, & Ray, 2006). Because of these behaviours exhibited by pupils with ODD in the classroom, teachers find it difficult to teach them, control and interact with them. Through interaction with some teachers in some of the primary schools while conducting another study, the researchers discovered that the teachers have some ODD pupils in their classes and decided to identify the challenges of teaching children with ODD in some selected schools in Makurdi metropolis in Benue State.

Objectives of the study: The major objective of this study was to identify the challenges of teaching children with opposition defiant disorder in some

primary schools in Makurdi Benue state.

Specifically, the study ascertained the;

1. behaviours that pupils with ODD exhibit during classroom activities;
2. the challenges faced in teaching pupils with ODD; and
3. the management skills that could help the teacher in teaching pupils with ODD.

Hypotheses

Three null hypotheses were formulated for the study.

H₀1. There is no significant difference between mean response of male and female teachers on the behaviours that pupils with ODD exhibit during classroom activities

H₀2. There is no significant difference between the mean response of male and female teachers on the challenges of teaching pupils with ODD.

H₀3. There is no significant difference between mean response of male and female teachers on the management skills that can help the teachers teach pupils with ODD without obstruction during class activities.

Methodology

Research design: The research design considered appropriate for this study was the cross-sectional survey research. The design involved the use of questionnaires to gather data.

Participants: Population of the study consists of 41 teachers in the three schools selected in Makurdi metropolis in Benue State. The selected schools are; Federal staff nursery and primary schools High-Level, Makurdi, Benue State University Staff School Km 5 Gboko road in Makurdi, and Nan-Tor

nursery and primary school Gyado Villa in Makurdi. No further sampling was carried as the population was manageable.

Instrument for data collection: The instrument used for data gathering was Oppositional Defiant Disorder Questionnaire (ODDQ). The instrument adopted a 5-point Likert scale with Strongly Agree SA-5Points, Agree A-4 points, Strongly Disagree SA-3points, and Disagree D-2 Points, Undecided-1point. The instrument was validated by three experts in Child development at Joseph Sarwuan Tarka University, Makurdi.

Data Collection Techniques: A total of 41 copies of the questionnaire were distributed by hand on the teachers by the researchers. All the copies of questionnaire administered were returned 100 percent.

Informed consent: The consent of the teachers were obtained using a form. The voluntary nature of participation and confidentiality of data were duly explained to them before they signed the form.

Data and Statistical Analysis: Data were analysed using mean and standard deviation for the three objectives of the study. The hypotheses were tested using the t-test statistics. The acceptable mean level for the study is 3.0 and above. The analysis was carried out with the aid of SPSS version 21.

Results

The behaviours that pupils with ODD exhibit during classroom activities

Table 1 shows the respondents view on the behaviours exhibited by pupils with ODD during classroom activities. The mean responses shows that frequent temper tantrums had a mean of 4.54, often questioning rules with the mean of 4.37, followed by Excessive arguments with adults with the mean of 4.29. Others include actively refusing to comply with request and rules with the mean of 4.17, deliberately annoying and upsetting others with the mean of 4.20, and vindictiveness mean of 3.59 among others.

Table 1: Mean and standard deviation of the behaviour's pupils with ODD exhibit during classroom activities N = 41

Item	Mean	Std. Dev.	Remark	t value	P-values
Frequent temper tantrums	4.54	0.84	Agreed		
Excessive arguments with adults	4.29	1.03	Agreed		
Actively refusing to comply with request and rules	4.17	1.24	Agreed	0.274	0.785
Often questioning rules	4.37	1.09	Agreed		
Deliberately annoying and upsetting others	4.20	1.08	Agreed		
Often touchy or annoyed by others	4.12	1.08	Agreed		
Blaming others for their mistakes	3.61	1.34	Agreed		
Frequent outbursts of anger and resentment	3.90	1.26	Agreed		
Spiteful attitude and revenge seeking	3.80	1.44	Agreed		
Aggressiveness	3.98	1.17	Agreed		
Vindictiveness	3.59	1.40	Agreed		

Challenges of teaching pupils with ODD

Table 2 shows that respondents agreed that the following are the challenges of teaching pupils with ODD. Bullying others during lessons in the classroom and making un-necessary noise during class lessons with the mean of 4.37 and 4.39 which are the highest. Followed by

going out of the classroom at will during class lessons and interrupting the teacher while lesson is going on with the mean of 4.12 each, inattentiveness and prefers be alone with the mean of 3.93 and 3.90 respectively, lack of problem-solving skills with the lowest mean of 3.37.

Table 2: Mean and standard deviation of the challenges of teaching pupils with ODD

Item	Mean	Std. Deviation	Remarks	t value	P values
Bullying other pupils during lessons in the classroom	4.37	0.89	Agreed		
Get upset by other pupils during class discussion	4.02	1.13	Agreed		
Go out of the classroom at will during class lessons	4.12	1.17	Agreed	0.333	0.741
Interrupt a teacher while class is going on	4.12	0.95	Agreed		
Make un-necessary noise during class lessons	4.39	0.83	Agreed		
Shout answers to other pupils during examination	3.66	1.22	Agreed		
Gets angry when question is asked during class lessons	3.68	1.23	Agreed		
Lack of problem-solving skills	3.37	1.24	Agreed		
Inattentiveness	3.93	1.13	Agreed		
Prefers to be alone during lessons	3.90	1.24	Agreed		
Easily distracted during class lessons	3.61	1.39	Agreed		

N = 41

Management skills that help teachers in teaching pupils with ODD

Table 3 shows the management skills that can help the teachers in teaching pupils with ODD. Result revealed that using reward system and using lots of praise had the highest response with the mean of 4.54 and 4.51 respectively.

Ignore the pupil's disruptive behaviours and turn arguments into discussion with the mean of 3.85 and 4.34, avoid public reprimands with the mean of 4.02 and listening to the pupils before reacting with the lowest mean of 3.29.

Table 3: Mean and standard deviation of the management skills helpful to teachers in teaching Pupils with ODD

Item	Mean	Std. Deviation	Remark	t value	P values
Use lots of praise	4.51	0.64	Agreed		
provide a warm and nurturing environment	4.24	0.80	Agreed	2.585	0.14
Use a reward system	4.54	0.78	Agreed		
Turn arguments into discussion	4.34	0.94	Agreed		
Give choices	4.37	0.83	Agreed		
Ignore the pupil's disruptive behaviours	3.85	0.94	Agreed		
Avoid intimidation	3.63	1.09	Agreed		
Avoid public reprimands	4.02	1.01	Agreed		
Avoid quick changes in normal routines	3.78	1.06	Agreed		
Avoid tasks that are beyond the pupil's ability	3.39	1.38	Agreed		
Listen to the pupil before reacting	3.29	1.40	Agreed		

N =41

Discussion of findings

The major behaviour exhibited by pupils with ODD during classroom activities are frequent temper tantrums, often questioning followed by excessive arguments with adults and vindictiveness. Other behaviours exhibited include: actively refusing to comply with rules and request; deliberately annoying and upsetting others; aggressiveness; spiteful attitude and revenge-seeking. This agrees with what Burke et al. (2014) identified as behaviours exhibited during classroom activities by pupils with ODD which comprised of being touchy, or easily annoyed, angry, and resentful, loses temper, argues, defies, or refuses to comply with rules given, blame others, deliberately annoys, spiteful or vindictive. Also, children who are diagnosed with ODD exhibit a recurrent pattern of emotional and behavioural symptoms, including anger or irritable mood, argumentative, defiant behaviours, and vindictiveness towards authority figures (American Psychiatric

Association, 2013). The study found no significant difference between mean response of male and female teachers on the behaviours that pupils with ODD exhibit during classroom activities.

The challenges faced by teachers in teaching pupils with ODD are the same. These challenges are bullying other pupils during lesson in the classroom and making un-necessary noise during class lesson with the mean 4.37 and 4.39 respectively, followed by going out of the classroom at will during class lessons, and interrupting their teacher while class is on with the mean of 4.12 each, lack of problem-solving skills with the mean of 3.37. other challenges faced by teachers while teaching pupils during class discussion, inattentiveness, gets angry when question is asked during class lessons, shout answers to other pupils during examinations, easily distracted during class lesson among others. This agrees with Fite et al. (2014) that children with high level of ODD symptoms are more likely to experience physical and relational forms of

victimization as well as to engage in bullying behaviour. Students with such behavioural issues make teachers' efforts in the classroom tedious and ineffective (Jessor, 2013). The behaviour of such students obstructs efficient teaching and learning since it impacts them and other students in the classroom. Also, there are many students in school age suffering from ODD, which negatively affects students' academic achievements and relationships with their peers, teachers or parents (Landrum et al., 2003). It was found that there was no significant difference between the mean response of male and female teachers on the challenges of teaching pupils with ODD. In finding solutions to the challenges similar approaches in the management of the students in the classroom could be adopted and shared among the teachers.

The management skills that can help teachers in teaching pupils with ODD includes using lots of praise and using a reward system, provide a warm and nurturing environment, turn arguments in to discussion, give choices, avoid public reprimands, avoid quick changes in normal routines, avoid task that are beyond the pupil's ability, listen to the pupil before reacting, among others. Teachers are typically responsible for dealing with disruptive behaviour and addressing it in the classroom in order to achieve the educational process's objectives (Barela et al., 2018). The effects of ODD emphasize the important role of teachers to use appropriate management skills to deal with oppositional behaviour to improve social and anger control skills (Fraser & Wray, 2008). These management skills are needed by teachers when there is

noise in the classroom as well as ODD pupils bordering their peer group or interrupt a teacher while class is going on. These management skills are significant to develop pupils' behaviour and academic achievements.

According to Salend and Sylvestre (2015), some of these management skills that can assist teachers during class work with their pupil's includes allow a student to choose one between two options, because it helps a pupil to pick an appropriate place, avoid speaking when pupils' status is oppositional, and talk softly to him or her at appropriate time (Pierangelo, & George, 2008). Improve self-confidence of pupils by encouraging and emphasizing every good work that they do, Train them to become relax, comfortable and flexible especially when their requirements have not been implemented. Applying behavioural management skills effectively requires understanding the features of ODD pupils which is one of the teaching challenges demands or tasks (Salend & Sylvestre, 2015). Undiyaundeye (2018) also ascertain that meeting pupils needs especially for students who have disability in inclusive classroom as teacher should modify lessons and activities to fit their abilities. Todras (2008) agrees that teachers have skills to control misbehaviours. According to Briesch, et al. (2012), mainstream teachers cite a number of reasons for classroom difficulties with these pupils, the most frequent one being defiance. Other behavioural concerns include inappropriate physical behaviour, aggression, social problems, abusive language, destruction of classroom property, extended tantrums and self-harm behaviours (Briesch, et al; 2012).

The study found no significant difference between mean response of male and female teachers on the management skills that can help the teachers in teaching pupils with ODD without obstruction during class activities. This implies that the management skills can be applied by all the teachers. This is contrary to Abaoud (2016), who found that female teachers are more likely than male teachers to implement intervention strategies aimed at improving students' academic achievement.

Conclusion

Oppositional Defiant Disorder is one of the groups of behavioural disorders that comprised of different patterns of disobedience, hostile, and defiant behaviour directed towards authority figures. Pupils with ODD often rebel, are stubborn, argue with adults, and refuse to obey instructions. They have anger outbursts and have a hard time controlling their temper. However, it is typically the job of teachers to confront these behaviours and handle them in the school setting in order to achieve the educational process's goals. Therefore, the study established some management skills that the teachers can use, while teaching pupils with ODD which can enhanced their learning, and curb most of their disruptive behaviours during class activities to enhance optimal educational status.

Recommendations

Based on the findings of the study the following recommendations were made:

1. Families and parents should increase positive parenting practices such as providing supportive and

consistent supervision and discipline to help reduce inappropriate and disruptive behaviours.

2. Teachers, especially general education instructors require more training courses and workshops in this field to gain sufficient knowledge about ODD. They should be trained on effective behaviour management skills and cognitive behavioural interventions that focus on coping skills and emotion regulation training.
3. Government should establish parent-management training programs and family therapy to teach parents and other family members how to manage the child's behaviour. Parents, family members, and other caregivers should be taught techniques in positive reinforcement and ways to discipline more effectively.
4. Home Economists especially those who specialized in child development or child psychology, should set up programs on cognitive problem-solving skills training for teachers to equip them to help the pupils with ODD reduce inappropriate behaviours by teaching them positive ways of responding to stressful situations and how to see situations and respond appropriately. Also, they should include social skills programs to teach the pupils how to relate more positively with their peers and ways to improve their school work as these therapies are more successful when conducted in a natural environment such as at school or in a social group.

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